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### ADDITIONS TO A CATALOGUE OF THE VASCULAR PLANTS OF THE PEACE AND UPPER LIARD RIVER REGIONS

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#### INTRODUCTION

IN 1934, the writer published a catalogue of the vascular flora of the Peace and Upper Liard River regions of northwestern Canada.<sup>1</sup> The material upon which the catalogue was based consisted principally of collections made during the field season of 1932 by Dr. E. C. Abbe and the writer on a journey to the Mt. Selwyn district. The route followed the railroad from Edmonton, Alberta, to Dawson Creek, B. C., and the Peace River up to the mountains. In the latter part of that season, a trip was made down the full length of the Peace River to Lake Athabaska, and the material collected along the Peace at Carcajou Settlement and above was also included. In addition to these personal collections, such specimens were cited as the writer had access to in the herbaria at Harvard, the New York Botanical Garden, the National Museum of Canada, and the Philadelphia Academy of Sciences, together with a few from the University of Alberta and from Cornell University.

It was clearly understood at the time that this catalogue was little more than an effort to bring together in one place such botanical knowledge of the region as was available, forming a working list for future investigations. The catalogue itself gave evidence of rather serious gaps which would have to be filled before anything approaching a complete floristic treatment could be made. It was noted<sup>2</sup> that such common or even weedlike forms as *Eleocharis acicularis*, *Juncus bufonius*, *Typha latifolia*, and *Plantago major* were given but limited ranges by the known records. Likewise, it was evident that aquatic floras had never been collected with any degree of thoroughness, and this still appears to be the case. Furthermore, the Upper Peace River region contains a group of young but highly developed agricultural communities in which an abundance of naturalized weeds might be

<sup>1</sup>Contributions from the Arnold Arboretum, Harvard University **6**: 1-230, 9 plates, 1 map.

<sup>2</sup>l. c. p. 7.



expected, but the necessities of the journey of 1932 precluded the possibility of doing justice to this phase of the problem. Consequently, most of the weed flora is absent from the original catalogue.

Additional specimen material has been accumulating steadily since 1934, and most of it has passed through the writer's hands. The original catalogue contained authentic records of 784 species, varieties, and forms, and the list of additions contains no less than 243, bringing the total for the known flora of the region to 1027 species, varieties and forms. Anyone familiar with the progress of botanical collecting in the North will realize that this is still only a working list, for the territory is vast and the regions that have been sampled are only a small fraction of it.

Although the new records have come from a variety of sources which will be noted in detail below, the principal collections are three. The largest number of new records comes from the studies of introduced weeds or "weedy" native plants made by Mr. Herbert Groh, of the Central Experimental Farm at Ottawa. The other large sources are in the collections of Mrs. Mary G. Henry, made during her journey across northern British Columbia in the summer of 1935, and in those of Dr. E. H. Moss, made in the field season of 1941.

In addition to the records of species new to the region, there have been included in the following list a few (32) range extensions. Most of the more recently collected specimens of course make minor extensions of range, but only those have been included which involve large areas of the region as a whole. That is, if a species was previously known only in the plains east of the mountains, but is now known in the latter, or vice versa, these facts have been noted. If a species was previously known by one record, and has subsequently proved to be common and wide-spread, the new data have also been included. Other names appearing in the list have to do principally with changes in nomenclature or in the determinations of specimens collected earlier. There are 49 of these changes, and the writer has attempted to bring the entire catalogue up to date in this regard. Nine species are listed as unverified.

Herbaria consulted in the preparation of the list of additions will be indicated by the following initials: (A) Arnold Arboretum; (B) the herbarium of the Provincial Museum of British Columbia at Victoria; (BU) the herbarium of the University of British Columbia at Vancouver; (Br) the private herbarium of Mr. A. H. Brinkman, Craigmyle, Alberta; (E) the herbarium of the Department of Agriculture, Central Experimental Farm, Ottawa, Canada; (G) Gray Herbarium; (P) the herbarium of the Academy of Natural Sciences, Philadelphia; (UA) herbarium of the University of Alberta at Edmonton. Specimens collected by Mr. E. C. Stacey are at the Agricultural Experiment Station, Beaverlodge, Alberta, except for a few duplicates at the Central Experimental Farm.

The original publication of 1934 is referred to throughout as the *Catalogue*. The order of families and genera in the new list is made to conform as well as possible with that of the *Catalogue*. Since the latter was



arranged chiefly in accordance with Engler and Gilg's *Syllabus der Pflanzenfamilien* (9th and 10th editions), the same work has been followed in the new list.

The collections of Mrs. Mary G. Henry in the season of 1933 were not available until the text of the original catalogue had been set up in type; but it was examined hurriedly, and most of the species which made additions to the flora were included.<sup>3</sup> Subsequently this collection was examined more carefully, and was found to contain a few more new records which began the list of additions given in this paper. A brief itinerary of Mrs. Henry's journey of 1933 is as follows: June 28, reached Peace River from Edmonton; July 5, forded Graham River; July 11, camped in Laurier Pass for a few days; July 14, reached Caribou Pass; July 18, Akie Pass; July 19, camped on Akie River for several days; July 22, started return journey; July 25, Caribou Pass; July 31, Laurier Pass; August 2, Cypress Pass; August 7, Hudson Hope. One hundred eighty-nine numbers of flowering plants and ferns were collected on this trip.

Mrs. Henry again visited northern British Columbia in the season of 1935, making a long and difficult journey from Ft. St. John all the way across the northern part of the province to Telegraph Creek. On this occasion she collected 231 numbers and made many additions to the known flora of the region. The following is an abbreviated sketch of this expedition which Mrs. Henry has very kindly contributed.

"On July 10, 1935 I left Ft. St. John, accompanied by my daughter Josephine. Our outfit consisted of five men and twenty-nine horses.

"We followed along the Peace and Halfway Rivers in a northwesterly direction, gradually winding into the mountains. We rode as far as our horses could carry us comfortably each day, usually about fifteen or twenty miles excepting when our way led us through bogs or across rivers.

"We traversed Laurier Pass and crossed the upper Halfway River the 23d. Continuing north we forded the Sikanni Chief River the 25th, the Besa River the 26th, and reached the Prophet River the 31st.

"August 4th we rafted the Musqua River and on the 9th we forded the Tuchodi River and camped on Lake Tuchodi. We spent a few days here mountain climbing, fishing and hunting.

"August 21st we crossed the Chisca River and once again I saw Mt. Mary Henry.

"We camped on the Tetsa River the 22d, and reached the Pass between Mt. St. Paul and Mt. St. George the next day. From here I went off with two men back packing into the mountains for three days to visit Mt. Mary Henry.

"August 31st we forded the Racing River and camped on the Toad River. This part of the country is inhabited by the Sikanni Indians and we frequently found their camps. The chief's son and two relatives joined us here for the remainder of our journey while two of our men returned with some of the horses.

<sup>3</sup>l. c. p. 23, footnote.



"We reached Muncho Lake September 3d and went over the Gundahoo Pass September 4th.

"We crossed the Rabbit River the 9th, the Kechika River the 11th and over Sand Creek Pass the 15th.

"We reached McDame Creek and Dease River September 22d, after covering about 1200 miles on horse and foot and for the fourth year adding new mountains and other features to Canada's map."

On all of Mrs. Henry's trips, she has had as guide Mr. K. F. McCusker, formerly of the Canadian Topographical Survey, who has carefully located the routes and contributed substantially to the maps of the country. These maps may be consulted for more details on the localities visited.<sup>4</sup>

Mr. Herbert Groh began his weed surveys in the Peace River agricultural districts in the autumn of 1929, after which a brief provisional review was published.<sup>5</sup> Most of his work of this season consisted in the accumulation of field notes in the vicinity of Beaverlodge, Alta., and along the roads between there and Pouce Coupé, B. C., and in the direction of Grande Prairie. It was done on Oct. 8-11, inclusive, and was the beginning of a series of surveys, made every five years, to provide "for at least one such area in Canada a more or less adequate weed history." A second, more extended journey was made in the three weeks beginning Aug. 28, 1934, during which Mr. Groh visited all of the principal farming districts of the Peace River region. On this trip he made copious notes and much larger collections than were possible in 1929. A short trip was also made in 1935 to settlements on the Athabaska River (Athabaska and Barrhead). As a result of these field studies a bulletin was published<sup>6</sup> containing a comprehensive list of species and a table showing their general distribution within the region. The present writer has drawn freely upon this excellent paper for notes on frequency and local distribution, and has made direct quotations from it in many cases. The use made of it in the following list, however, does not begin to do it justice, for only such items were selected as made additions to the catalogue of 1934.

In 1939 Mr. Groh again visited the Peace River country, beginning his collections on Aug. 22, and finishing them on Sept. 21. He re-examined most of the agricultural districts, returning with a much larger collection than had been made on previous trips. This collection, of approximately

<sup>4</sup>Most of the localities mentioned by Mrs. Henry are to be found on the following maps: National Topographic Series, sheet No. 94 S. E. (Hudson Hope); British Columbia, sheet no. 94 B (Halfway River); Northern British Columbia, map no. 1-H, published in 1933. Mrs. Henry published a rather detailed and sumptuously illustrated paper in the *National Horticultural Magazine* (**13**: 60-75, 162-181, 269-290, 363-383, 1934). The photographs in this paper include many habit pictures of the plants of the region, and the article is replete with notes on flower color and the local habitat selection of species.

<sup>5</sup>GROH, H. Grande Prairie Weeds — A Provisional Review. Dept. Agr. Can. Pamphlet No. 117, N.S., 1930.

<sup>6</sup>GROH, H. Peace-Athabaska Weeds, a Reconnaissance Appraisal. Dept. Agr. Can. Publ. no. 556, Tech. Bull. no. 7, 1937.



440 field members, has served to verify most of his earlier field notes, and has made substantial contributions to our knowledge of the flora.

Mr. Groh's collections of 1929, 1934, and 1935 were not numbered. Consequently, in citing them the dates on which they were made have been included. The 1939 collections, however, have serial field numbers by which they are cited, and the following itinerary is needed to make the data complete.

DATES	LOCALITIES	FIELD NUMBERS
Aug. 22	Watino, Spirit River	642-644
Aug. 23-24	Beaverlodge, South Wapiti	645-691
Aug. 25	Saskatoon Mt., and Vicinity, near Beaverlodge	1216, 692-716
Aug. 27	Attachie, B. C., and along Halfway R., near Farrell, B. C.	718-722
Aug. 28-31	Hudson Hope, B. C.	723-817
Sept. 1	Bear Flat, B. C.	818
Sept. 2	Taylor, B. C., and Vicinity	819-831
Sept. 4	Dawson Creek, B. C., and Rolla, B. C.	832-836
Sept. 6	Beaverlodge, Lower Beaverlodge, and Hythe	837-859, 1181
Sept. 7	Beaverlodge and Huallan	860-863
Sept. 8	Grande Prairie	864-881
Sept. 9	Beaverlodge, Wembley	882-885
Sept. 10	Grande Prairie	886-891
Sept. 11-12	Grande Prairie and Vicinity (Bear L., Kleskun L.)	892-923
Sept. 12-13	Spirit River and Vicinity	924-981
Sept. 14	Ryecroft, Wanham, Watino, McLennan, Girouxville	982-994
Sept. 15	Hines Creek, Brownvale	995-1012
Sept. 16	Griffin Creek, Grimshaw, Berwyn, Peace River	1013-1035
Sept. 17	McLennan, Kathleen, and L. Kimiwan	1036-1053
Sept. 18	Kenzie, High Prairie	1054-1061
Sept. 19	Grouard and Vicinity, (Prairie Echo, High Prairie, Salt Prairie, Heart River, Enilda, Grouard)	1062-1077
Sept. 21	Calahoo, Rockfort Bridge, Greencourt, Meyerthorpe	1080-1087
Sept. 23-24	Bonnyville, St. Paul, Cold Lake	1088-1119, 1217, 1218

The collections of Sept. 23-24 are from northeast of Edmonton, so that they are not in our region. Those of Sept. 21 have been included, however, as they come from the Athabaska drainage.

A few miscellaneous collections by other workers have come through Mr. Groh as loans from the herbarium of the Experimental Farm at Ottawa. The names of these collectors are included in the list, with dates and localities.

Dr. E. H. Moss of the University of Alberta has very kindly gone through his field notes and collections from the Peace-Athabaska district in search of records that would make additions to the flora. Records of his collections of 1934 are included here, as are also a few from his trip of 1931 which



escaped notice in the original catalogue. In 1941 Dr. Moss again visited the district and collected about 200 numbers of flowering plants and ferns which have yielded many additions. His itinerary for this trip is as follows:

DATES	LOCALITIES	FIELD NUMBERS
July 15	Slave Lake	6053-6072
July 15-16	Widewater, Lesser Slave L.	6073-6080
July 16	Canyon Creek, Lesser Slave L.	6081
July 16-18	Peace River	6084-6138
July 19	Dixonville, N. of Grimshaw	6139-6154
July 19	White Mud R., N. of Grimshaw	6156-6157
July 20-21	Notikewin and vicinity	6158-6193
July 22-24	Faust, Lesser Slave L.	6194-6231
July 25	Canyon Creek, Lesser Slave L.	6238-6248
July 26	Martin River and vicinity, N. shore of Lesser Slave L.	6249-6278
July 27-28	Canyon Creek, Lesser Slave L.	6280-6291
July 29	Smith	6298-6304

Most of the records for the Lesser Slave Lake District in the original catalogue were cited from specimens collected by Mr. A. H. Brinkman of Craigmyle, Alberta. These were seen at the herbarium of the New York Botanical Garden, or were loaned from Cornell University. Since then Mr. Brinkman has very kindly supplied a comprehensive numerical list of his collections about Lesser Slave Lake, from which many additional records have been drawn. He has also loaned a number of specimens so that doubtful records could be checked.

In the summer of 1930 the Pacific Great Eastern Railway made an extended topographical and geological survey of the upper Peace River. A geological assistant in the field party, Dr. Roy Graham, made a rather large collection of plants which is now to be found at the University of British Columbia. A list of species and a general description of the vegetation, together with an itinerary, were published by Dr. Graham in 1934.<sup>7</sup> Small collections were made on June 22 on a small island in the Peace River at Finlay Forks, and on June 23 along Lost Cabin Creek, a small tributary to the Peace about 3 miles east of Finlay Forks. The main collection was made between June 28 and the end of August in the southern half of what is known as the "Dominion Block," or the "Peace River Block," a partially agricultural district approximately between latitudes  $55^{\circ}30'$  and  $56^{\circ}45'$ , and longitudes  $120^{\circ}$  and  $122^{\circ}$ . The following is a condensed itinerary given by Graham (l. c. p. 14). "From Hudson Hope by boat down the Peace to the Alberta boundary and back to Hudson Hope; then by pack-train southward to the west end of Moberly Lake, and on to East Pine via Jackfish Lake; from East Pine by pack-train up the Pine River to Peavine Flats (about 7 miles west of the Block boundary) and back to East Pine;

<sup>7</sup>GRAHAM, ROY. Notes on the Flora of the Peace River. Rept. of the Prov. Mus. Nat. Hist., B.C., for 1933, pp. 13-24 (1934).



from there northward and eastward to Sunset Prairie, and then southward and eastward through Kiskatinaw (Arras), finishing up the season at Dawson Creek."

About 250 species of flowering plants and ferns are listed by Graham. The writer has seen only a few of the specimens (39), selected because they seemed to make unique additions to the known flora of the district.<sup>8</sup> Most of the other records published by Graham which are additions to the catalogue of 1934 have been substantiated by material from other collectors (chiefly from Mr. Groh and Mrs. Henry), but these records are mentioned in the new list. A few of Graham's records, however, still remain unchecked, and are included in the list provisionally.<sup>9</sup>

A considerable number of specimens have been sent to the writer from the herbarium of the Provincial Museum of British Columbia at Victoria. These were collected by several people who were either living in the Peace River district or travelling there, and whose names are given in the list along with the localities and dates of their collections. The largest single collection in this group was made in the spring and summer of 1938 by Mr. I. McT. Cowan, and contains 44 field numbers. A few records from this museum also reached the writer through Dr. G. N. Jones, to whom the specimens had been sent for determination.

A very interesting collection, principally of grasses and sedges, was loaned by Mr. E. C. Stacey of the Agricultural Experiment Station at Beaverlodge. The specimens were gathered in the summers of 1925 and 1926 in the Beaverlodge district, and were in support of an excellent thesis prepared by Mr. Stacey describing the vegetation of that district. Unfortunately this paper remains unpublished.

#### ACKNOWLEDGMENTS

It is a pleasure to acknowledge the many kindnesses bestowed by the persons who have contributed material for this paper. The writer is particularly indebted to Mr. Herbert Groh, to Mrs. Mary G. Henry, and to Dr. E. H. Moss for entrusting him with their large collections of specimens, and for their patience in answering the many queries that came up as the

<sup>8</sup>Most of these additions proved to be based upon misdeterminations. The following are the names under which they appeared in Graham's published list, with the necessary corrections: *Phegopteris alpestris* = *Athyrium Filix-femina*, *Juniperus scopulorum* = *J. horizontalis*, *Juncus oreganus* = *J. alpinus*, *Maianthemum bifolium* = *M. canadense* var. *interius*, *Sisyrinchium idahoense* = *S. angustifolium*, *Goodyera Menziesii* = *G. repens*, *Urtica Lyallii* = *U. gracilis*, *Stellaria umbellata* = *S. longipes*, *Actaea spicata* and *A. arguta* = *A. rubra*, *Aconitum columbianum* = *A. delphinifolium*, *Heuchera cylindrica* = *H. Richardsonii*, *Oxytropis monticola* = *O. spicata*, *O. Lambertii* = *O. splendens*, *Osmorhiza nuda* = *O. obtusa*, *Vaccinium oreophilum* = *V. caespitosum*, *Mertensia ciliata* = *M. paniculata*, *Rhinanthus Crista-galli* = ?*R. Kyrollae*, *Lonicera ciliosa* = *L. glaucescens*, *Aster occidentalis* = *A. junceus*, *Antennaria anaphaloides* = *A. campestris*, *Senecio Balsamitae* = *S. pauperculus*, *Hieracium umbellatum* = ?*H. canadense*.

<sup>9</sup>These unverified records are: *Corallorrhiza Mertensiana*, *Stellaria crispa*, *Cardamine oligosperma*, *Oenanthe sarmentosa*, *Veronica Anagallis-aquatica*, *Crepis virens*.



material was studied. Likewise Mr. A. H. Brinkman and Mr. E. C. Stacey have provided valuable data directly from their personal notes and collections. Thanks are due to Dr. Francis Kermode, Director of the Provincial Museum of British Columbia, and to Mrs. Winifred V. Hardy, its Recorder of Botany, for arranging the loan of specimens; and to Professor John Davidson of the Department of Botany at the University of British Columbia for the loan of specimens collected by Dr. Roy Graham. The writer wishes also to express his appreciation for the notes contributed on the genus *Polemonium* by Dr. E. T. Wherry of the University of Pennsylvania; and for those of Dr. Francis W. Pennell, of the Philadelphia Academy of Science, on *Castilleja*. He is also indebted to Dr. Pennell for arranging the loan of Mrs. Henry's collections from the Philadelphia Academy.

#### OPHIOGLOSSACEAE

**Botrychium multifidum** (Gmel.) Rupr. — *B. matricariaefolium* (Schrank.) Spreng. — *B. ternatum* (Thimb.) Sw. var. *rutaefolium* (A. Br.) D. C. Eat. — See Rept. Mich. Acad. Sci. **18**: 86 (1916). — Fort St. John Road, B. C., S. of Peace R., wooded bank of stream, *Groh*, Sept. 17, 1934 (E); among willows in sand dunes, Lesser Slave Lake, Alta., *Moss*, no. 2888 (UA).

#### POLYPODIACEAE

**Dryopteris Linnaeana** C. Chr. — *Thelypteris Dryopteris* (L.) Slosson. — This and the following four species were cited in the *Catalogue* under the genus name *Thelypteris*, and should now be placed under *Dryopteris*. The necessary synonymy is given herewith.

**Dryopteris Robertiana** (Hoffm.) C. Chr. — *Thelypteris Robertiana* (Hoffm.) Slosson.

**Dryopteris fragrans** (L.) Schott. — *Thelypteris fragrans* (L.) Nieuwl.

**Dryopteris spinulosa** (O. F. Muell.) Watt. — *Thelypteris spinulosa* (O. F. Muell.) Nieuwl.

**Dryopteris spinulosa** (O. F. Muell.) Watt. var. **dilatata** (Hoffm.) Watt. — *T. s.* var. *dilatata* (Hoffm.) St. John.

#### EQUISETACEAE

**Equisetum arvense** L. forma **serotina** (G. F. W. Mey.) Milde. — Tupper Cr., B. C., *Cowan*, no. 10819 (B), June 7, 1938. — This form is apparently rare. The fruiting fronds turn green and produce branches like those of the sterile fronds.

**Equisetum fluviatile** L. — Specimens cited in the *Catalogue* under *E. limosum* L. should bear the above name.

#### LYCOPODIACEAE

**Lycopodium clavatum** L. — Lesser Slave L. district, *Brinkman*, no. 4676 (Br) — The typical species was not included in the *Catalogue*; only vars. *monostachyon* and *megastachyon*.

#### PINACEAE

**Picea glauca** Voss var. **albertiana** (S. Brown) Sarg. — Most of the material cited in the *Catalogue* as typical *P. glauca* probably belongs to this western variety.

**Picea Engelmanni** (Parry) Engelm. — Laurier Pass, B. C., alt. 4200', *Mrs. Henry*, no. 661 (A). — This material is typical of the species, and does not appear to merge with *P. glauca* as does that collected in the Peace River pass.

**Abies balsamea** (L.) Mill. — Canyon Creek, Lesser Slave L., *Moss*, no. 6238 (UA, G). — Dr. Moss reports (personal communication) this species is common in the Widewater-Canyon Creek district, and states that he saw no *A. lasiocarpa*.

**Pinus Banksiana** Lamb. — *P. divaricata* of auth. — McLennan, Alta., *Groh*, no. 1049 (E); Saskatoon Mt., near Beaverlodge, Alta., *Groh*, no. 693 (E). — The finding of *P. Banksiana* in this region accentuates the overlapping of cordilleran and eastern



forest affinities in the upper Peace River country (see *Catalogue*, p. 79). The taxonomic relationship between *P. Banksiana* and *P. contorta* var. *latifolia* (*P. Murrayana*), especially in the region of overlap, is worthy of further study. After his journey of 1941, Dr. E. H. Moss makes the following comments (personal communication): "*Pinus Banksiana* seems to prevail at Smith and on the north shore of Lesser Slave Lake opposite Widewater and Canyon Creek. Between Lesser Slave Lake and Peace River *P. Banksiana* and *P. Murrayana* were observed. At Peace River town both species grow intermixed, with jackpine predominating. Trees showing intermediate characters were rather common in the Slave Lake - Peace River region." It is his opinion "that lodgepole pine is less prevalent than jackpine in the Lesser Slave Lake - Peace River (town) region."

#### TYPHACEAE

***Typha latifolia*** L. — Slave Lake, *Moss*, no. 6072 (UA). — Reported in the Peace River region by John Macoun in 1872; and Groh lists it as common in the Peace-Athabaska farming country.

#### SPARGANIACEAE

***Sparganium multipedunculatum*** (Morong) Rydb. — White Mud R., N. of Grimshaw, Alta., *Moss*, no. 6175 (UA). — John Macoun's record for *S. simplex*, between Lesser Slave L. and Hudson Hope in 1872 probably refers to this species. See *Rhod.* **27**: 190 (1925).

#### POTAMOGETONACEAE

***Potamogeton praelongus*** Wulf. — Shore of Tuchodi L., B. C., alt. 4200', *Mrs. Henry*, no. 851 (G, P).

***Potamogeton Richardsonii*** (A. Benn.) Rydb. — Blue L., B. C., *Mrs. Henry*, no. 807 (G, P); Lesser Slave L. District, *Brinkman*, no. 3907 (Br); Faust, Lesser Slave L., *Moss*, no. 6203 (UA).

***Potamogeton Friesii*** Rupr. — Blue L., B. C., *Mrs. Henry*, no. 805 (G, P).

***Potamogeton pusillus*** L. var. ***tenuissimus*** Mert. & Koch. — Near Martin River, N. shore of Lesser Slave L., *Moss*, no. 6278 (UA, G).

***Potamogeton pectinatus*** L. — In small lime-encrusted lake 15 mi. E. of Kechica R., B. C., alt. 2000', *Mrs. Henry*, no. 927 (G, P); Blue L., B. C., *Mrs. Henry*, no. 808 (G, P); Faust, Lesser Slave L., *Moss*, no. 6202 (UA).

#### SCHEUCHZERIAEAE

***Triglochin palustre*** L. — Springy ground, Montney, B. C., *Groh*, Sept. 5, 1934 (E); muddy creek margin, Peace River, Alta., *Moss*, no. 6109 (UA, G). — Not previously reported in the Peace River district east of the mountains.

#### GRAMINEAE

***Bromus inermis*** Leyss. — Reported by Graham in the Peace River Block, B. C., and stated by Groh to be extensively escaped in the Peace River agricultural districts.

***Bromus Porteri*** Nash. — Dry hillside, Peace River, Alta., *Groh*, no. 1026 (E, G).

***Bromus secalinus*** L. — reported by Groh along a roadside near Donnelly, Alta., in 1934.

***Festuca saximontana*** Rydb. — See *Rhod.* **37**: 250-2 (1935). — Beaverlodge district, Alta., *Stacey*, no. 35; sandy tract, Hudson Hope, B. C., *Groh*, no. 773 (E, G); prairie near Peace River, Alta., *Moss*, no. 6133 (UA, G). — Records of *Festuca ovina* by Graham, Brinkman and Raup are probably all referable to this species.

***Fluminia festucacea*** (Willd.) Hitchc. — Reported by Brinkman at Marion L., Alta. His specimens (no. 3955) were determined by the late Dr. A. S. Hitchcock. Reported by John Macoun in 1872 (as *Festuca borealis*) between Lesser Slave L. and Hudson Hope, and probably common in wet meadows in many parts of the region.

***Glyceria grandis*** S. Wats. — Beaverlodge district, Alta., *Stacey*, no. 3; Faust, Lesser Slave L., *Moss*, no. 6198 (UA, G).

***Puccinellia distans*** (L.) Parl. var. ***tenuis*** (Vechtritz) Fern. & Weatherby. — Peace River, Alta., *Groh*, Sept. 12, 1934 (E); ditches and along railway, Spirit River, Alta., *Groh*, nos. 644, 945 (E).



**Puccinellia Nuttalliana** (Schultes) Hitchc. — *P. airoides* (Nutt.) Wats. & Coult. — Clyde, Alta., *Groh*, July 4, 1935 (E); McLennan, *Groh*, Sept. 15, 1934 (E); Berwyn, Alta., *J. L. Kerns*, Aug. 15, 1939 (E, G); moist ravine, Spirit River, Alta., *Groh*, no. 937 (E, G); muddy creek margin, Peace River, Alta., *Moss*, no. 6108 (UA, G). — The record of John Macoun for *Glyceria airoides* at saline springs along the Peace River above the Smoky probably belongs here.

**Poa annua** L. — Dawson Creek, B. C., *Groh*, Sept. 1, 1934 (E); garden at Brownvale, Alta., *Groh*, no. 1011 (E). — Reported by Brinkman in the Lesser Slave L. district, and noted by Groh as a troublesome lawn weed in parts of the Peace River agricultural district.

**Poa abbreviata** R. Br. — Specimens cited in the *Catalogue* under *P. laxa* Haenke belong here.

**Poa compressa** L. — Beaverlodge district, Alta., *Stacey*, no. 12; railway yards, Spirit River, Alta., *Groh*, no. 933 (E, G). — Reported by Groh as fairly well distributed throughout the Peace River agricultural district.

**Poa nervosa** (Hook.) Vasey. — Beaverlodge district, Alta., *Stacey*. — On this specimen is the note, "Collected by Godfrey, July 12, 1932, in plots," suggesting that it was introduced.

**Poa trivialis** L. — Reported by Brinkman in the Lesser Slave L. district. His specimens (no. 4302) were determined by the late Dr. A. S. Hitchcock.

**Distichlis stricta** (Torr.) Rydb. — See Rhod. **27**: 67 (1925). — Alkali slough, Bear L., near Grande Prairie, Alta., *Groh*, no. 894 (E, G). — John Macoun's record of *Brizopyrum spicatum* at saline springs along the Peace R. above the Smoky is undoubtedly referable to this species. It has been found to be common in saline areas in the wood Buffalo Park (Raup, Bot. Invest. Wood Buff. Park, 1935, p. 104).

**Agropyron repens** (L.) Beauv. — Railway, Peace River, Alta., *Groh*, Sept. 12, 1934 (E); Grande Prairie, Alta., *Groh*, Oct. 11, 1934 (E). — Groh states that this species "is spreading in the West, has already a strong foothold in the Athabaska district, and has increased some in the Grande Prairie and other districts since 1929, when it was found at Beaverlodge and Grande Prairie." Reported by Graham in the Peace River Block, B. C.

**Agropyron repens** (L.) Beauv. var. **subulatum** (Schreb.) Reichenb. — See Rhod. **35**: 182-5 (1933). — Berwyn, Alta., *Groh*, Sept. 13, 1934 (E); roadside, Prairie Echo, Alta., *Groh*, no. 1073 (E).

**Agropyron Smithii** Rydb. — Railway, Beaverlodge, Alta., *Groh*, no. 861 (E, G); railway at Greencourt, Alta., *Groh*, no. 1085 (E, G). — Reported as a weed by Groh in most parts of the Peace River agricultural district.

**Agropyron dasystachyum** (Hook.) Scribn. var. **subvillosum** Scribn. & Sm. — Dry hills, Hudson Hope, B. C., *Groh*, no. 798 (E, G). — The combination *Agropyron dasystachyum* was wrongly attributed to Vasey in the *Catalogue*, p. 124.

**Agropyron riparium** Scribn. & Sm. — Beaverlodge district, Alta., *Stacey*, no. 17-a. — This material appears to be a good match for a duplicate of the type found in the Gray Herbarium.

**Agropyron trachycaulum** (Link) Malte var. **glaucum** (Pease & Moore) Malte. — Prairie soil, Spirit River, Alta., *Groh*, no. 951 (E, G). — These plants have somewhat pubescent glumes which match a part of the type of var. *pilosiglume* Malte in the Gray Herbarium. This variety, however, may not be worthy of distinction. It was reduced to var. *glaucum* by Fernald in Rhod. **35**: pl. 244 (1933).

**Agropyron trachycaulum** (Link) Malte var. **novae-angliae** (Scribn.) Fern. — Railway at Hythe, Alta., *Groh*, no. 855 (E, G). — Not previously reported in the upper Peace River district east of the mountains.

**Secale cereale** L. — Groh states that the rye "volunteers wherever grown," and thus becomes a weed in succeeding crops.

**ELYMUS GLAUCUS** Buckl. — Noted by John Macoun in 1872 between Lesser Slave L. and Hudson Hope, and by Graham in the Peace River Block, B. C.

**Hordeum jubatum** L. — Beaverlodge district, Alta., *Stacey*, no. 5, and *Malte*, July 17, 1921 (E); sandy tract, Hudson Hope, B. C., *Groh*, no. 766 (E, G). A common



native grass which becomes weedy in waste cleared areas. No specimens of it were available when the *Catalogue* was published, and its extent was not known.

**Trisetum spicatum** (L.) Richter var. **molle** (Michx.) Beal. — Notikewin, Alta., *Moss*, no. 6177 (UA). — Not previously noted in the upper Peace - Athabaska district east of the mountains.

**Avena sativa** L. — Baldonnel, B. C., *Groh*, Sept. 5, 1934 (E).

**Avena Hookeri** Scribn. — Beaverlodge district, Alta., *Stacey*, no. 13.

**Danthonia intermedia** Vasey. — Low open place near poplar thicket, Sexsmith, Alta., *Moss*, no. 1797 (UA); prairie, Notikewin, Alta., *Moss*, no. 6161 (UA, G). — Noted in the *Catalogue* only from the mountains (mouth of Wicked R.).

**Calamagrostis canadensis** (Michx.) Nutt. — Beaverlodge district, Alta., *Stacey*, no. 1; sandy lake shore, Canyon Creek, Lesser Slave L., *Moss*, no. 6247 (UA, G). — The typical species not previously reported, though the larger-flowered varieties are well-known in the upper Peace country.

**Calamagrostis canadensis** (Michx.) Nutt. var. **robusta** Vasey. — Near Martin River, N. shore of Lesser Slave L., *Moss*, no. 6274 (UA, G). — Not previously noted in the upper Peace - Athabaska district east of the mountains.

**Calamagrostis neglecta** (Ehrh.) Gaertn. — Reported by Brinkman near Fawcett L. His specimens (no. 3892) were determined by the late Dr. A. S. Hitchcock.

**Agrostis stolonifera** L. — See Ann. Rept. Nat. Mus. Can. for 1926, pp. 105-26 (1928). — Hythe, Alta., *Groh*, Aug. 31, 1934 (E). — Groh's specimens appear to represent the variety *compacta* Hartm. Graham's record of *A. alba* in the Peace River Block, B. C., probably belongs under this species.

**Agrostis scabra** Willd. — Dry roadside, Hudson Hope, B. C., *Groh*, no. 728 (E, G); prairie sod, Spirit River, Alta., *Groh*, no. 954 (E, G); dry prairie, Beaverlodge, Alta., *Groh*, no. 661 (E); Beaverlodge district, Alta., *Stacey*, no. 6. — Not recorded in *Catalogue* east of mountains. Groh states that it "increases sometimes in hay meadows to the detriment of quality." This is also the case in the Wood Buffalo Park (Raup, Bot. Invest. Wood Buff. Pk., 1935, p. 86).

**Cinna latifolia** (Trev.) Griseb. — Dry poplar woods, Hudson Hope, B. C., *Groh*, no. 746 (E, G); Beaverlodge district, Alta., *Stacey*, no. 27. — Not previously reported east of the mountains; specimens collected by Brinkman in the Lesser Slave Lake district not examined.

**Alopecurus aequalis** Sobol. — Pouce Coupé, B. C., *Groh*, Sept. 1, 1934 (E); McLennan, Alta., *Malte*, July 22, 1921 (E); Beaverlodge, Alta., *Malte*, July 17, 1921 (E); slough, Beaverlodge, Alta., *Groh*, no. 675 (E, G); lake shore, Grouard, Alta., *Groh*, no. 1065 (E); Beaverlodge district, Alta., *Stacey*, no. 25. — Not previously recorded in the upper Peace River district east of the mountains.

**Muhlenbergia squarrosa** (Trin.) Rydb. — Moist ravine, Spirit River, Alta., *Groh*, no. 936 (E, G); railway, Beaverlodge, Alta., *Groh*, no. 845 (E, G). — John Macoun's record for *Vilfa cuspidata* between Lesser Slave Lake and Hudson Hope may belong here. Mr. Groh's plants appear to represent the erect form of the species which has gone by the name of *M. Richardsonis* (Torr.) Rydb. A record of it in the Wood Buffalo Park was published under this name (Raup, Bot. Invest. Wood Buff. Park, 1935, p. 109).

**Stipa columbiana** Macoun. — Beaverlodge district, Alta., *Stacey*, no. 23a; *Groh*, Aug. 29, 1934 (E, G); dry field, Lower Beaverlodge, Alta., *Groh*, no. 842 (E, G); sandy loam, bank of drift soil, Spirit River, Alta., *Groh*, no. 979 (E, G); grassland near Rolla, B. C., *Moss*, no. 2380 (UA); dry valley slopes, Peace River, Alta., *Moss*, nos. 6085, 6131 (UA, G). — Groh's plant, no. 979, appears to be intermediate between this species and *S. viridula*. It has a few hairs at the throats of the lower sheaths.

**Stipa Richardsonii** Link. — Pouce Coupé, B. C., *Malte*, July 15, 1921 (E); sandy tract, Hudson Hope, B. C., *Groh*, no. 762 (E, G).

**Phalaris canariensis** L. — In yards, Dawson Creek, B. C., *Groh*, Sept. 1, 1934 (E); roadside, Spirit River, Alta., *Groh*, no. 969 (E, G). — Mr. Groh also reports this species at Pouce Coupé, growing about railway yards.

**Phalaris arundinacea** L. — Beaverlodge district, Alta., *Stacey*, no. 8; border of slough, Slave Lake, Alta., *Moss*, no. 6062 (UA, G). — Previously reported by John



Macoun between Lesser Slave Lake and Hudson Hope, and probably common in wet meadows throughout.

**Setaria viridis** (L.) Beauv. — Railway yards, Berwyn, Alta., *Groh*, no. 1018 (E). — Also reported by *Groh* at Ft. St. John, B. C., Fairview and Peace River, Alta.

#### CYPERACEAE

**Eriophorum medium** Anders. — A specimen cited in the *Catalogue* under *E. chamissonis* forma *albidum* should bear the above name. See Hultén, *Fl. Kamtchatka* 1: 161 (1927) for a recent discussion.

**Eriophorum viridicarinatum** (Engelm.) Fern. — Cited in the *Catalogue* from the mountains, but now reported by Brinkman in the Lesser Slave L. district (no. 3887). Specimens not examined.

**Eriophorum angustifolium** Roth. — Moist sand on bank of Musqua R., B. C., *Mrs. Henry*, no. 787 (G, P).

**Eleocharis palustris** (L.) R. & S. var. **major** Sonder. — According to the monographer of the genus, Dr. H. K. Svensen, at least a part of the material cited in the *Catalogue* under the typical species (*Raup & Abbe*, no. 4330) should be referred to var. *major*.

**Kobresia Bellardi** (All.) Degl. — A single individual of this species was overlooked on a sheet of *Carex nardina* var. *Hepburnii* collected by *Raup & Abbe* (no. 3916) on the west slope of Mt. Selwyn, alt. 4–5000'. It may be that other sheets of this number will also contain it.

**Carex stenophylla** Wahl. var. **enervis** (C. A. Mey.) Kükenth. — Specimens cited in the *Catalogue* as the typical species should be referred to this variety.

**Carex stipata** Willd. — Open place in aspen woods, Faust, Lesser Slave L., *Moss*, no. 6212 (UA).

**Carex interior** Bailey. — Reported by Brinkman in the Lesser Slave L. district (no. 3881), but specimens not examined. Not previously noted in the Peace River region east of the Mountains.

**Carex aenea** Fern. — Low place in aspen woods west of Hythe, Alta., *Moss*, no. 2386 (UA).

**Carex sychnocephala** Carey. — Sandy lake shore, Faust, Lesser Slave L., *Moss*, no. 6231 (UA, G).

**Carex macloviana** Urv. — McLeod L., B. C., *John Macoun*, 1875. — This specimen, in the Gray Herbarium, was overlooked in the preparation of the *Catalogue*. The species was reported by Graham in the Peace River Block, B. C.

**Carex scirpoidea** Michx. — Not noted in the *Catalogue* east of the Mountains, but reported by Brinkman in the Lesser Slave L. district (no. 4653).

**Carex Garberi** Fern. var. **bifaria** Fern. — See *Rhod.* 37: 253–5 (1935). — Material cited in the *Catalogue* under *C. Hassei* Bailey should be referred to this species.

**Carex paupercula** Michx. var. **irrigua** (Wahl.) Fern. — Edge of small lake in muskeg, Smith, Alta., *Moss*, no. 6301 (UA).

**Carex angarae** Steud. — Material cited in the *Catalogue* under *C. VahlII* var. *inferalpina* should be referred to this species according to A. E. Porsild in *Rhod.* 41: 203–5 (1939).

**Carex Kelloggii** Boott. — Slough along Peace R. about 6 mi. below the mouth of the Wicked, *Raup & Abbe*, nos. 4019, 4022. — These numbers were cited in the *Catalogue* under *C. lenticularis* Michx., but Mr. J. W. Stacey, who has since been over the collection, has identified them as above.

**Carex misandra** R. Br. — Caribou Pass, B. C., alt. 6800', *Mrs. Henry*, no. 624 (G, P). — Also reported by Graham in the Peace River Block, B. C.

**Carex lanuginosa** Michx. — Beaverlodge district, Alta., *Stacey*, no. 31.

**Carex montanensis** Bailey. — Damp turfy slope on Mt. Selwyn, alt. about 4500'. *Raup & Abbe*, no. 4145. — cited in the *Catalogue* under *C. ambusta* Boott.

**Carex trichocarpa** Muhl. var. **aristata** (R. Br.) Bailey. — *C. atherodes* Spreng. — Low place on sandy lake shore, Canyon Creek, Lesser Slave L., *Moss*, no. 6243



(UA, G). — Previously reported, without specimens, near Hudson Hope by Raup in 1932.

**Carex retrorsa** Schw. — Low place in virgin poplar-spruce forest, Widewater, Lesser Slave L., *Moss*, no. 6074 (UA, G). — Not previously reported in the upper Peace - Athabaska country east of the mountains.

#### LEMNACEAE

**Lemna trisulca** L. — In small lake surrounded by muskeg, Smith, Alta., *Moss*, no. 6299-a (UA). — Reported by John Macoun between Lesser Slave L. and Hudson Hope in 1872.

**Spirodela polyrhiza** (L.) Schleid. — Stagnant pool, High Prairie, Alta., *Groh*, no. 1077 (E, G).

#### JUNCACEAE

**Juncus bufonius** L. — Wet ground, Widewater, Alta., *Groh*, Sept. 17, 1934 (E); by stream, Mayerthorpe, Alta., *Groh*, no. 1087 (E); open place in aspen woods, Faust, Lesser Slave L., *Moss*, no. 6213 (UA, G). — Previously reported by John Macoun between Lesser Slave L. and Hudson Hope in 1872.

**Juncus Dudleyi** Wieg. — Sandy lake shore at edge of stream mouth, Faust, Lesser Slave L., *Moss*, no. 6204 (UA, G).

**Juncus alpinus** Vill. var. **rariflorus** (Hartm.) Hartm. — *J. alpinus* var. *insignis* Fries. — *J. Richardsonianus* Schultes. — See Botaniska Notiser 1932, pp. 313-72, and Rhod. **35**: 233-4 (1933). — Sandy shore, Faust, Lesser Slave L., *Moss*, no. 6206 (UA); near Martin River, N. shore of Lesser Slave L., *Moss*, no. 6276 (UA, G). — This variety is occasional in the central part of the Mackenzie basin, but not previously reported in the southwestern portions.

**Juncus castaneus** Smith. — Damp moss on sunny hillside, 10 mi. W. of Mt. Dame, B. C., *Mrs. Henry*, no. 949 (G, P).

**Luzula arcuata** Wahl. — Near small lake on W. slope of Mt. Selwyn, alt. about 5000', *Raup & Abbe*, no. 4098. — This specimen was erroneously cited in the *Catalogue* under *L. parviflora*.

#### LILIACEAE

**Lilium philadelphicum** L. var. **andinum** (Nutt.) Ker. — Peace River, Alta., *Mrs. Henry*, no. 662 (G, P); Saskatoon Mt., near Beaverlodge, Alta., *Groh*, no. 701 (E, G). — Only a yellow-flowered forma *immaculatum* of this variety was previously reported in the upper Peace River region.

**Asparagus officinalis** L. — Noted by Groh as an occasional wayside escape in the agricultural district.

**Streptopus amplexifolius** (L.) DC. var. **americanus** Schultes. — Specimens cited in the *Catalogue* under the typical species should be referred to this variety according to Dr. N. C. Fassett in Rhod. **37**: 88-113 (1935).

#### ORCHIDACEAE

**Habenaria viridis** (L.) R. Br. var. **interjecta** Fern. — Specimens cited in the *Catalogue* under var. *bracteata* probably all belong here (see Rhod. **28**: 173, 1926). Also collected by Groh at Hudson Hope, B. C. (no. 792, E), in the Beaverlodge district, Alta., by Stacey, and at Bear Flat, B. C., by Freer (no. 10206, B).

**Goodyera repens** (L.) R. Br. — Specimens cited in the *Catalogue* under *Epipactis repens* should bear this name.

**Goodyera decipiens** (Hook.) Hubbard. — Specimens cited in the *Catalogue* as *Epipactis decipiens* belong under this name.

**Corallorrhiza striata** Lindl. — Peace River district, B. C., *Miss Bertrand*, 1933, no. 9430 (B).

CORALLORRHIZA MERTENSIANA Bong. — Reported by Graham in the Peace River Block, B. C.

#### SALICACEAE

**Salix MacCalliana** Rowlee. — Moist meadow, Deep Creek, B. C., *Mrs. Henry*,



no. 675 (A, P); meadow near stream east of Rabbit R., B. C., *Mrs. Henry*, no. 919 (A, P); dry muskeg, Dixonville, N. of Grimshaw, Alta., *Moss*, no. 6143 (UA, G).

**Salix glauca** L. — Dry muskegs, Notikewin, Alta., *Moss*, no. 6167 (UA, G), and Dixonville, N. of Grimshaw, Alta., *Moss*, no. 6142 (UA, G). — Noted in the *Catalogue* only from the mountains. Brinkman reports it (as var. *glabrescens* Schn.) in the Lesser Slave L. district (no. 4657), but his specimens have not been seen by the writer.

**Salix discolor** Muhl. — Some sterile specimens cited in the *Catalogue* under *S. arbusculoides* suggest this species, and there is a sterile specimen at the National Herbarium of Canada, collected by C. R. Ball, 17 mi. N. E. of Clyde, Alta., which has been named *S. discolor*. Another sterile twig, collected by Groh along a roadside at Grande Prairie, Alta., (no. 886, E, A), probably also belongs here; and one collected by Brinkman (no. 3869) at Lesser Slave Lake appears to be good *S. discolor*. As yet no flowering material is available.

**Salix Scouleriana** Barr. — Moist soil on hillside, Dease L., B. C., *Mrs. Henry*, no. 954 (A, P); sandy loam, on drift soil, Spirit River, Alta., *Groh*, no. 981 (E, A); virgin poplar-spruce forest, Widewater, Lesser Slave L., *Moss*, no. 6076 (UA, G).

#### BETULACEAE

**Betula papyrifera** Marsh. var. **neoalaskana** (Sarg.) Raup. — Tetsa R., B. C., alt. 3800', *Mrs. Henry*, no. 887 (A, P). — Previously reported in our region only in the eastern part.

#### MORACEAE

**Cannabis sativa** L. — Farmyard, Spirit River, Alta., *Groh*, no. 972 (E, G).

#### URTICACEAE

**Urtica urens** L. — Beaverlodge, Alta., *Groh*, Aug. 29, 1934 (E); and no. 646 (E, G). — Noted by Groh as observed only at Beaverlodge, and not occurring abundantly.

#### LORANTHACEAE

**Arceuthobium americanum** Nutt. — Although no specimens are available, this species is probably common throughout the region. Groh noted it on *Pinus contorta* var. *latifolia* at Dawson Creek, and Brinkman reported it in the Lesser Slave L. district.

#### POLYGONACEAE

**Rumex Acetosella** L. — Reported by Groh at Beaverlodge, Alta., and in the Athabaska district.

**Rumex mexicanus** Meisn. — Sandy shore near Martin River, N. shore of Lesser Slave L., *Moss*, no. 6268 (UA, G). — Reported by Groh as rather widely distributed in the agricultural districts, "growing in waste places, damp meadows and on slough margins."

**Polygonum achoreum** Blake. — Garden, at Grande Prairie, Alta., *Groh*, no. 889 (E, G).

**Polygonum scabrum** Moench. — *P. tomentosum* (Schrank.) Bickn. — See *Rhod.* 23: 259 (1921). — Slough and stream banks, Grande Prairie, Alta., *Groh*, nos. 876, 912 (E, G); lake shore at Grouard, Alta., *Groh*, no. 1066 (E, G).

**Polygonum Douglasii** Greene. — Edge of field, Beaverlodge, Alta., *Groh*, no. 849 (E, G). — John Macoun's record of *P. tenue* between Lesser Slave L. and Hudson Hope in 1872 may belong here.

**Polygonum coccineum** Muhl. — Sand dunes at lake shore, near Martin River, N. shore of Lesser Slave L., *Moss*, no. 6255 (UA, G). — These specimens represent the terrestrial form of the species (forma *terrestre* (Willd.) Stanford).

**Polygonum Convolvulus** L. — Along railway, Peace River, Alta., *Moss*, no. 6104 (UA). — Reported by Groh as a common weed throughout most of the agricultural districts. Also noted by Graham in the Peace River Block, B. C., and earlier by John Macoun between Lesser Slave L. and Hudson Hope.

**Fagopyrum esculentum** Moench. — Noted by Groh as "sparingly persisting after cultivation."



## CHENOPODIACEAE

**Chenopodium capitatum** (L.) Asch. — Garden, Beaverlodge, Alta., *Groh*, no. 647 (E, G); Hudson Hope, B. C., *R. J. Ferguson*, Aug. 29, 1939 (E). — Not previously collected in the Peace River district east of the mountains, but reported by Groh as common throughout, especially as a weed in new clearings.

**Chenopodium glaucum** L. — Recently seeded roadside, Griffin Creek, S. of Brownvale, Alta., *Groh*, no. 1014 (E); moist ground, Beaverlodge, Alta., *Groh*, no. 847 (E); garden, Beaverlodge, Alta., *Groh*, no. 645 (E, G); denuded bench of river valley, Peace River, Alta., *Moss*, no. 6136 (UA). — Reported by John Macoun in 1872 between Lesser Slave L. and Hudson Hope, and in 1875 at saline springs along the Peace River above the Smoky.

**Chenopodium rubrum** L. — Reported by Groh in saline places at Peace River, Alta.

**Atriplex patula** L. var. **hastata** (L.) Gray. — Roadside, Grande Prairie, Alta., *Groh*, no. 910 (E, G). — Groh states that both the species and the variety are "occasionally seen in waste places, particularly under saline conditions."

**Atriplex hortensis** L. — Escape from garden, Peace River, Alta., *Groh*, Sept. 12, 1934 (E).

**Monolepis Nuttalliana** (Schultes) Greene. — Dooryard, North Pine, *Groh*, Sept. 6, 1934 (E); Beaverlodge, Alta., *Groh*, Oct. 9, 1929 (E); railway yard, Peace River, Alta., *Groh*, no. 1027 (E). — Noted by Groh as "occasional in somewhat alkaline spots, and at times a crop weed right across the belt."

**Axyris amaranthoides** L. — Cultivated fields, Peace River, Alta., *J. Bostock*, Aug. 1926 (E); neglected garden, Peace River, Alta., *Moss*, no. 6110 (UA); railway, Hines' Creek, Alta., *Groh*, no. 1000 (E, G). — Groh states that this species has become a common weed of waste land and roadsides throughout the agricultural districts.

**Salicornia europaea** L. — Alkaline slough, Salt Prairie, Alta., *Groh*, no. 1072 (E, G). — John Macoun's records for *S. herbacea* between Lesser Slave L. and Hudson Hope in 1872, and at saline springs along the Peace R. above the Smoky in 1875 undoubtedly belong here.

**Suaeda depressa** (Pursh) Wats. — Alkali slough, Bear L., near Grande Prairie, Alta., *Groh*, no. 893 (E, G); ditch, Spirit River, Alta., *Groh*, no. 935 (E, G); alkali slough, Salt Prairie, Alta., *Groh*, no. 1070 (E, G); alkali spot in railway yards, Spirit River, Alta., *Groh*, no. 964 (E, G). — John Macoun's record for *S. maritima* in 1872 between Lesser Slave L. and Hudson Hope probably belongs here.

**Salsola Kali** L. var. **tenuifolia** G. F. W. Mey. — Pouce Coupé, B. C., *Groh*, Sept. 1, 1934 (E); Beaverlodge, Alta., *Groh*, Oct. 9, 1929 (E); railway yard, Peace River, Alta., *Groh*, no. 1028 (E); railway, Hythe, Alta., *Groh*, no. 857 (E); railway, Ryecroft, Alta., *Groh*, no. 984 (E, G). — Found chiefly in the very light soils of railways. Groh thinks that "in the North [it] may spread but little away from railway gravel and some light waste land."

## AMARANTHACEAE

**Amaranthus graecizans** L. — Peace River, Alta., *Groh*, Sept. 12, 1934 (E); cultivated ground, Spirit River, Alta., *Groh*, no. 970 (E, G); railway, Watino, Alta., *Groh*, no. 988 (E, G).

**Amaranthus retroflexus** L. — Garden, Peace River, Alta., *Groh*, Sept. 12, 1934 (E); railway, Ryecroft, Alta., *Groh*, no. 982 (E); cultivated ground, Spirit River, Alta., *Groh*, no. 971 (E, G); railway, Watino, Alta., *Groh*, no. 987 (E).

## CARYOPHYLLACEAE

**Stellaria calycantha** (Ledeb.) Bong. — Material cited under *S. borealis* in the *Catalogue* should bear this name. See Hultén, *Fl. Aleut. Isl.* 164-5 (1937); and Fernald, *Rhod.* 42: 254-9 (1940).

STELLARIA CRISPA C. & S. — Reported by Graham in the Peace River Block, B. C.

**Stellaria media** (L.) Cyrill. — Reported by Groh as a rather common weed in the



agricultural districts, and noted by John Macoun in 1872 between Lesser Slave L. and Hudson Hope.

**Cerastium vulgatum** L. — Widewater, Alta., *Groh*, Sept. 17, 1934 (E). — This specimen is only a rosette with runners, and is somewhat doubtfully determined. This species is reported by *Groh* as a weed also at Peace River, Alta., and in the Athabaska district.

**Arenaria dawsonensis** Britton. — Moist rocky debris along a creek near Tuchodi L., B. C., *Mrs. Henry*, no. 822 (G, P).

**Silene repens** Patrin. — Dry clay and limestone rocks, mountain near Tuchodi L., B. C., alt. 6000', *Mrs. Henry*, no. 842 (G, P); stony peat in grass, Mt. of the Gods, Prophet R., B. C., alt. 5500', *Mrs. Henry*, no. 775 (G, P); dry sandy clay and peat, mountain near Besa R., B. C., alt. 5000', *Mrs. Henry*, no. 760 (G, P).

**Silene latifolia** (Mill.) Britten & Rendle. — Reported by *Groh* as a weed at Beaverlodge, Alta.

**Lychnis alba** Mill. — Athabaska, Alta., *Groh*, July 3, 1935 (E); roadside, Widewater, Alta., *Moss*, no. 6075 (UA, G). — *Groh* reports it as a weed in the Athabaska district.

**Lychnis Drummondii** Wats. — Roadside at Taylor, B. C., *Groh*, no. 829 (E, G); prairie on dry valley slope, Peace River, Alta., *Moss*, no. 6101 (UA, G). — Reported by John Macoun in 1872 between Lesser Slave L. and Hudson Hope.

#### CERATOPHYLLACEAE

**Ceratophyllum demersum** L. — In small lake surrounded by muskeg, Smith, Alta., *Moss*, no. 6299 (UA).

#### RANUNCULACEAE

**Anemone canadensis** L. — Ft. Vermilion, Alta., *F. S. Lawrence*, 1907 (E); Rye-croft, Alta., *Mrs. Henry*, no. 373 (P); low ground, High Prairie, Alta., *Groh*, no. 1059 (E); under willows and poplars near a slough, Slave Lake, Alta., *Moss*, no. 6067 (UA, G). — Previously reported by Brinkman in the Lesser Slave L. district, and by John Macoun between Lesser Slave L. and Hudson Hope in 1872.

**Ranunculus trichophyllus** Chaix var. **typicus** Drew. — See *Rhod.* 38: 1-47 (1936). — Specimens cited in the *Catalogue* under *R. aquatilis* var. *capillaceus* belong here, as well as specimens collected by *Groh* (nos. 947, 956, E) in 1939 at Beaverlodge, Alta.

**Ranunculus Gmelini** DC. var. **Purshii** (Richards.) Hara. — Specimens cited in the *Catalogue* under *R. Purshii* should bear this name. See *Rhod.* 41: 385-6 (1939).

**Ranunculus hyperboreus** Rottb. — Damp moss at edge of Blue L., B. C., *Mrs. Henry*, no. 796 (G, P).

**Ranunculus pennsylvanicus** L. — Slough, Grande Prairie, Alta., *Groh*, no. 878 (E); Widewater, Alta., near shore of Lesser Slave L., *Moss*, no. 2228 (UA); open place in aspen woods, Faust, Lesser Slave L., *Moss*, no. 6211 (UA, G).

**Ranunculus acris** L. — Railway yards, Grande Prairie, Alta., *Groh*, no. 867 (E, G). — *Groh* reports this species as a weed of increasing importance, but thus far found mostly near railway lines.

#### CAPPARIDACEAE

**Cleome serrulata** Pursh. — Railway, Hythe, Alta., *Groh*, no. 856 (E, G). — *Groh* reports only a single colony near a grain elevator at Hythe, and states that it is probably an introduction.

#### CRUCIFERAE

**Draba nivalis** Liljebl. — Specimens collected on a mountain near Bluebell Mt., B. C., alt. 6500', *Mrs. Henry*, no. 541 (P), are somewhat doubtfully determined thus.

**Draba luteola** Greene. — Near Graham R., B. C., alt. 3000', *Mrs. Henry*, no. 463 (P); Charlie L., B. C., *Cowan*, June 11, 1938, no. 10821 (B).

**Draba glabella** Pursh. — Stony peat, Caribou Ridge, B. C., alt. 6300', *Mrs. Henry*, no. 768 (G, P); stony slide, mountain E. of Laurier Pass, B. C., alt. 5500', *Mrs. Henry*, no. 714(?) (G, P); Caribou Pass, B. C., alt. 5000', *Mrs. Henry*, no. 599(?) (P); moun-



tain near Bluebell Mt., B. C., alt. 6500', *Mrs. Henry*, no. 542(?) (P); hilltop in Laurier Pass, B. C., *Mrs. Henry*, no. 505(?) (P). — Several of these specimens are incomplete or without maturing siliques, making their determination uncertain.

***Draba McCallae*** Rydb. — Near Graham R., B. C., alt. 3200', *Mrs. Henry*, nos. 468, 469 (P).

***Draba lanceolata*** Royle. — Graham R., B. C., alt. 3400', *Mrs. Henry*, no. 467 (P); mountain side near Boulder Cr., B. C., alt. 4500', *Mrs. Henry*, no. 482 (P); dry, sunny meadow, middle fork of Nelson R., B. C., alt. 3900', *Mrs. Henry*, no. 740 (G, P); Saskatoon Mt., near Beaverlodge, Alta., *Groh*, no. 1216 (G). — A record of *D. cana* by Graham in the Peace River Block, B. C., may belong here.

***Draba nemorosa*** L. var. ***lejocarpa*** Lindbl. — See *Rhod.* **36**: 366 (1934). — Railway, High Prairie, Alta., *Groh*, no. 1061 (E, G); dry land, Beaverlodge, Alta., *Groh*, no. 686 (E, G); railway, McLennan, Alta., *Groh*, no. 1040 (E). — Specimens cited in the *Catalogue* under *D. nemorosa*, collected near Dawson Creek (*Raup & Abbe*, no. 3519), appear to represent the above variety.

***Lesquerella arctica*** (Wormsk.) Wats. — See *Rhod.* **35**: 267–70 (1933). — Dry rocky débris, mountain near Tuchodi L., B. C., alt. 6000', *Mrs. Henry*, no. 848 (P).

***Thlaspi arvense*** L. — Waste ground, Beaverlodge, Alta., *Groh*, no. 848 (E). — Reported by *Groh* as a common and obnoxious weed throughout the agricultural districts.

***Lepidium sativum*** L. — Roadside recently seeded to grass, Griffin Creek, S. of Brownvale, Alta., *Groh*, no. 1013 (E, G).

***Cardaria Draba*** (L.) Desv. var. ***repens*** (Schrenk.) O. E. Schulz. — *Lepidium Draba* L. — See *Rhod.* **42**: 302–6 (1940). — Waste places, Grand Prairie, Alta., *M. Davies*, Aug. 1929 (E); Tepee Creek, Alta., *Jack Head*, Aug. 1928 (E); Pouce Coupé, B. C., *Sgt. Greenwood*, Aug. 1932 (B); six mi. E. of Grande Prairie, Alta., *Groh*, no. 906 (E, G). See also *Groh* in *Can. Field Nat.* **55**: 55 (1941) for further notes on the history of this plant and the next in Canada.

***Cardaria pubescens*** (Meyer) Rollins var. ***elongata*** Rollins. — See *Rhod.* **42**: 302–6 (1940). — Six mi. E. of Grande Prairie, Alta., *Groh*, no. 907 (E); yards and fields, Rolla, B. C., *Groh*, nos. 835, 836 (E); field, Grimshaw, Alta., *Groh*, no. 1016 (E, G).

***Camellina sativa*** (L.) Crantz. — Rose Prairie, B. C., *Groh*, Sept. 6, 1934 (E); Beaverlodge, Alta., *Groh*, Oct. 9, 1929 (E); roadside, Taylor, B. C., *Groh*, no. 827 (G); Kleskun Lake bottom, E. of Grande Prairie, Alta., *Groh*, no. 900 (E, G). — Reported (with *C. microcarpa*) as common throughout most of the agricultural districts.

***Camellina microcarpa*** Andr. — Athabaska, Alta., *Groh*, July 3, 1935 (E); Hythe, Alta., *Groh*, Aug. 31, 1934 (E); Beaverlodge, Alta., *Groh*, Aug. 29, 1934 (E) and Oct. 9, 1929 (E); Barrhead, Alta., *Groh*, June 27, 1935 (E).

***Neslia paniculata*** (L.) Desf. — Reported by *Groh* as common and widespread in the agricultural districts — "One of the chief mustards in all the grain-growing parts." Also noted by Graham in the Peace River Block, B. C.

***Erucastrum gallicum*** (Willd.) Schulz. — Brownvale, Alta., *Groh*, Sept. 13, 1934 (E); Greencourt, Alta., *Groh*, no. 1083 (E, G), Calahoo, Alta., *Groh*, no. 1080 (E, G); Rochfort Bridge, Alta., *Groh*, no. 1081 (E, G); McLennan, Alta., *Groh*, no. 1053 (E). — Mainly along railways.

***Brassica Kaber*** (DC.) Wheeler var. ***pinnatifida*** (Stokes) Wheeler. — *Brassica arvensis* (L.) Ktze. — See *Rhod.* **40**: 306–9 (1938). — Girouxville, Alta., *Groh*, no. 991 (E, G); McLennan, Alta., *Groh*, no. 1043 (E); Hines Creek, Alta., *Groh*, no. 996 (E); Spirit River, Alta., *Groh*, no. 643 (E).

***Brassica campestris*** L. — Railway, Grande Prairie, Alta., *Groh*, no. 874 (E). — Also reported by *Groh* at Athabaska.

***Conringia orientalis*** (L.) Dumort. — Hythe, Alta., *Groh*, Aug. 31, 1934 (E). — *Groh* states that this has been "Five times recorded from end to end of the belt."

***Sisymbrium altissimum*** L. — Roadside near Taylor, B. C., *Moss*, no. 2372 (UA). — Reported by *Groh* as widespread and common throughout the agricultural districts, "but chiefly yet as a weed of railways and waste places."



**Descurainia Sophia** (L.) Wats. — Waste places, Halcourt, Alta., *Groh*, Oct. 11, 1929 (E); Beaverlodge, Alta., *Groh*, Oct. 9, 1929 and Aug. 29, 1934 (E); Hythe, Alta., *Groh*, Aug. 31, 1934 (E); Ft. St. John, B. C., *Groh*, Sept. 7, 1934; railway, Hines Creek, Alta., *Groh*, no. 997 (E, G). — *Groh* reports this species (under *Sisymbrium Sophia*) as a common and widespread weed.

**Descurainia Richardsonii** (Sweet) O. E. Schulz. — Ft. St. John, B. C., *Groh*, Sept. 7, 1934 (E); railway yards, Brownvale, Alta., *Groh*, no. 1001 (E, G); railway and roadsides, Beaverlodge, Alta., *Groh*, nos. 884 (E, G), 862 (E); waste places, High Prairie, Alta., *Groh*, no. 1076 (E, G); railway yards, Berwyn, Alta., *Groh*, no. 1019 (E); sandy lake shore, Canyon Creek, Lesser Slave L., *Moss*, no. 6246 (UA, G). — *Groh's* records of *Sisymbrium Hartwegianum* ("at Fort St. John and occasionally throughout") should be referred to this species. His specimens from Hudson Hope, B. C., no. 816 (E), are doubtfully placed here. *Descurainia Richardsonii* is in the *Catalogue*, but had been collected only on the Halfway River, B. C.

**Braya purpurascens** (R. Br.) Bunge. — Specimens somewhat doubtfully so determined were collected by *Mrs. Henry* on a mountain near Caribou Pass, B. C., alt. 6500', no. 611 (P); on a mountain near the source of Akie R., B. C., alt. 5500', no. 570 (P); and on the Nelson R., B. C., alt. 4200', no. 523 (P).

**Braya Richardsonii** Fern. — Graham R., B. C., alt. 4000', *Mrs. Henry*, no. 501 (P).

**Hesperis matronalis** L. — Reported by *Groh* only at Athabaska, Alta.

**Erysimum cheiranthoides** L. — Open ground, Bear Flat, Peace R., B. C., *Phyllis Freer*, July 12, 1935 (B); railway, Grande Prairie, Alta., *Groh*, no. 864 (E, G). — Previously reported in 1872 between Lesser Slave L. and Hudson Hope by John Macoun, and at McLeod L. in 1879 by G. M. Dawson. *Groh* considers this species, so far as its character as a weed is concerned, "One of the worst of the native mustards." He reports it throughout the agricultural district.

**Rorippa islandica** (Oeder) Borbás var. **microcarpa** (Regel) Fern. — Material cited in the *Catalogue* under *R. palustris* var. *glabrata* should bear the above name. See *Rhod.* 42: 25-32, 267-74 (1940).

**Rorippa islandica** (Oeder) Borbás var. **hispida** (Desv.) Butters & Abbe. — *R. palustre* var. *hispida* of auth. — See *Rhod.* 42: 25-32 (1940). — Lesser Slave L. district, *Brinkman*, no. 4563 (N, Br); sandy beach, Canyon Creek, Lesser Slave L., *Moss*, no. 6280 (UA, G). — The *Brinkman* number was cited in the *Catalogue*, incorrectly, under *R. palustris* var. *glabrata*.

**Armoracia lapathifolia** Gilib. — *Radicula Armoracia* of auth. — Reported by *Groh* as an escape at Fairview, Alta.

**Barbarea orthoceras** Ledeb. — Tupper Cr., B. C., *Cowan*, July 5, 1938, no. 10847 (B). — Previously reported in the upper Peace R. region only in the mountains.

CARDAMINE OLIGOSPERMA Nutt. — Reported by *Graham* in the Peace River Block, B. C. Probably referable to *C. pennsylvanica*.

**Arabis lyrata** L. var. **kamchatica** Fisch. — See *Rhod.* 39: 88-98 (1937). — Fallow field, Brownvale, Alta., *Groh*, no. 1012 (E). — All of the material cited in the *Catalogue* under *A. lyrata* var. *occidentalis* (*Raup & Abbe*, nos. 3797, 4096, 4153, 4267) should be placed here.

**Arabis hirsuta** (L.) Scop. var. **pyncocarpa** (Hopkins) Rollins. — See *Rhod.* 39: 112-22 (1937) and 43: 318 (1941). — Dawson Creek, B. C., *Groh*, Sept. 1, 1934 (E); Ft. St. John, B. C., *Groh*, Sept. 4, 1934 (E). Specimens cited in the *Catalogue* under *A. hirsuta* (*Raup & Abbe* nos. 3638, 3581) have been referred to var. *pyncocarpa* by Rollins.

**Arabis Holboellii** Hornem. — Dr. R. C. Rollins, who has recently monographed *Arabis* in western America, has referred part of the material cited in the *Catalogue* under *A. retrofracta* to the above species: Damp turfey ledge on W. slope of Mt. Selwyn, alt. 4-5000', *Raup & Abbe*, no. 3958. The remainder is referred to the following variety. See *Rhod.* 43: 439-45 (1941).

**Arabis Holboellii** Hornem. var. **retrofracta** (Grah.) Rydb. — Dry slope of River Bluff at Taylor Flat, *Raup & Abbe*, no. 3573.



**Arabis divaricarpa** A. Nels. — Railway yard, Brownvale, Alta., *Groh*, no. 1004 (E, G); Lesser Slave L. district, *Brinkman*, no. 4338.

## SAXIFRAGACEAE

**Tellima grandiflora** Dougl. — Previously reported on the Misinchinca R., B. C., by Dawson in 1879, and collected by Graham in the Peace River Block, B. C., no. 396 (BU).

**Parnassia palustris** L. var. **neogaea** Fern. — See *Rhod.* **39**: 311 (1937). — Near Saskatoon Mt., Beaverlodge, Alta., *Groh*, no. 706 (E); border of slough, Slave Lake, Alta., *Moss*, no. 6068 (UA, G). — A specimen cited in the *Catalogue* under *P. multiseta* should be referred to this species. Previously reported only in the mountains.

**Parnassia parviflora** DC. — Moist bank, Hudson Hope, B. C., *Groh*, no. 753 (E, G); Tupper Cr., B. C., *Cowan*, June 6, 1938, no. 10893(?) (B). — Also reported by Graham in the Peace River Block, B. C.

**Ribes hirtellum** Michx. — See *Rhod.* **13**: 73–76 (1911). — Lesser Slave L. district, *Brinkman*, nos. 4167, 4277 (Br.).

## ROSACEAE

**Aruncus sylvester** Kost. — Professor M. L. Fernald, who has recently discussed this group for America (*Rhod.* **38**: 179–82, 1936), maintains that western material usually cited under *A. acuminatus* cannot be separated from *A. sylvester* of Eurasia.

**Sorbaria sorbifolia** (L.) A. Br. — Roadside, Peace River, Alta., *Groh*, no. 1022 (E).

**Sorbus scopulina** Greene. — Saskatoon Mt., near Beaverlodge, Alta., *Moss*, no. 2304 (UA); virgin poplar-spruce forest, Widewater, Lesser Slave L., *Moss*, no. 6078 (UA, G). — Material cited in the *Catalogue* under *S. dumosa* should be placed here. — See Jones in *Jour. Arn. Arb.* **20**: 1–43 (1939).

**Crataegus columbiana** Howell. — Hillside at Bear Flat, B. C., *P. Fraser*, June 14, 1935, no. 10169 (B). — John Macoun's records of *C. rivularis* at McLeod L., and of *C. Douglasii* at Hudson Hope in 1875 may have been based on this species.

**Rubus parviflorus** Nutt. forma **bifarius** (Fern.) Fassett. — Specimens cited in the *Catalogue* as typical *R. parviflorus* should have the above name, according to a recent treatment by Fassett in *Ann. Mo. Bot. Gard.* **27**: 299–374 (1941). See also Fernald in *Rhod.* **37**: 273–84 (1935). A specimen collected by Groh on Bear Mt., near Dawson Creek, B. C., Sept. 3, 1934 (E), should also be included.

**Rubus pedatus** Smith. — Mountain in Akie Pass, B. C., alt. 4500', *Mrs. Henry*, no. 589 (P). — Previously known in our region from a single specimen, collected at McLeod L., B. C., by John Macoun in 1875.

**Rubus arcticus** L. — Swale E. of Beaverlodge, Alta., *Groh*, Aug. 30, 1934 (E); Rose Prairie, B. C., *Groh*, Sept. 6, 1934 (E). — Not noted in the *Catalogue* east of the Rocky Mountains.

**Potentilla norvegica** L. var. **hirsuta** (Michx.) Lehm. — Noted in the *Catalogue* only near Rocky Mountain Portage, but according to Groh, common throughout the agricultural districts. Groh has collected it at Fahler, Beaverlodge, and Grande Prairie, Alta.

**Potentilla millegrana** Engelm. — Fahler, Alta., *Groh*, Sept. 4, 1934 (E); bank of stream, Grande Prairie, Alta., *Groh*, no. 918 (G); lake shore, Grouard, Alta., *Groh*, no. 1067 (E, G). — Noted by Groh as occurring particularly on burnt-over land.

**Potentilla biflora** Willd. — Peat over limestone, Mt. of the Gods, Prophet R., B. C., alt. 6500', *Mrs. Henry*, no. 774 (G, P); mountain near Gathto Cr., B. C., alt. 6300', *Mrs. Henry*, no. 813 (G, P).

**Potentilla glabrella** Rydb. — High Prairie, Alta., *Groh*, Sept. 15, 1934 (E); dry roadside, Hudson Hope, B. C., *Groh*, no. 730 (E); sandy tract, Hudson Hope, B. C., *Groh*, no. 767 (E, G).

**Potentilla gracilis** Dougl. subsp. **Nuttallii** (Lehm.) Keck. — See *Carn. Inst. Wash. Publ.* no. **520**: 134–6 (1940) for a recent treatment of the synonymy of this subspecies. — Beaverlodge, Alta., *Groh*, Oct. 9, 1929 (E); swale E. of Beaverlodge, Alta., *Groh*, Aug. 30, 1934 (E); edge of field, Beaverlodge, *Groh*, no. 850 (E); Dawson Creek,



B. C., *Cowan*, June 27, 1938, no. 10811 (B). — Graham's record of *P. Nuttallii* in the Peace River Block, B. C., may be referable here.

**Potentilla Hippiana** Lehm. — Dry hill, Cache Cr., B. C., *Mrs. Henry*, no. 679 (G, P).

**Potentilla Anserina** L. — Moist open ground, Bear L., Alta., *J. Bostock*, Aug., 1926 (E); sandy lake shore near Martin River, N. shore of Lesser Slave L., *Moss*, no. 6264 (UA). — Not noted in the Catalogue east of the Rocky Mountains. Reported by Groh as "frequent in wet situations."

**Chamaerhodos Nuttallii** Pickering. — See Rhod. **37**: 284–5 (1935). — Turnagain R., B. C., *Mrs. Henry*, nos. 940, 941 (G, P).

**Geum aleppicum** Jacq. var. **strictum** (Ait.) Fern. — *G. strictum* Ait. — See Rhod. **37**: 293–4 (1935). — Material cited in the *Catalogue* under *G. strictum* should be referred here. Groh reports this species as rather common and wide-spread in the agricultural districts.

**Agrimonia striata** Michx. — High Prairie, Alta., *Groh*, Sept. 15, 1934 (E). — Also reported by Groh in the Athabaska district, Alta.

**Sanguisorba sitchensis** C. A. Meyer. — *S. canadensis* L. var. *latifolia* Hook. — See Hultén, Fl. Aleut. Isls. 232–3 (1937). — Dease R., B. C., *Mrs. Henry*, no. 964 (P). — Dawson's record of *Potterium canadense* on the Misinchinca R. in 1879 may be this species.

#### LEGUMINOSAE

**Medicago sativa** L. — Reported by Groh as an escape, especially in the western part of the agricultural district.

**Medicago lupulina** L. — Reported by Groh as a weed at Beaverlodge and Fahler, Alta.

**Medicago falcata** L. — Beaverlodge, Alta., *Groh*, Aug. 30, 1934 (E). — Reported by Groh as an occasional escape.

**Melilotus alba** Desf. — Reported by Groh as a common escape throughout most of the agricultural districts. It is more frequent than the next.

**Melilotus officinalis** Lam. — Reported by Groh as a common escape throughout most of the agricultural districts.

**Trifolium repens** L. — Reported by Groh as an escape, common to abundant throughout the agricultural districts.

**Trifolium hybridum** L. — Reported by Groh as an abundant escape throughout the agricultural districts. He states that "... the alsike clover evidently [is] better at home than the others, and the red clover least so."

**Trifolium pratense** L. — Reported by Groh as an escape throughout most of the region.

**Caragana arborescens** Lam. — Roadside ditch, seeded from nearby hedge, High Prairie, Alta., *Groh*, no. 1055 (E, G).

**Astragalus canadensis** L. — Woods, Bear Flat, B. C., *Groh*, no. 818 (E, G).

**Astragalus lineare** (Rydb.) A. E. Porsild. — See Rhod. **41**: 250–51 (1939). — Lesser Slave L. district, *Brinkman*, no. 4073 (Br.).

**Oxytropis retrorsa** Fern. — See Rhod. **30**: 140–41 (1928). — Grande Prairie, Alta., *Miss J. Bostock*, Aug. 1926 (E); railway, Hines Creek, Alta., *Groh*, no. 995 (E).

**Oxytropis Paysoniana** A. Nels. — Specimens cited in the *Catalogue* under *O. saximontana* A. Nels. (*Raup & Abbe*, nos. 3844, 3980) should be referred to this species.

**Hedysarum alpinum** L. var. **grandiflorum** Rollins. — See Rhod. **42**: 217–39 (1940). — Specimens noted in the *Catalogue* under *H. alpinum* (*Raup & Abbe*, nos. 3967, 4091) should be referred to this variety.

**Hedysarum boreale** Nutt. — See Rhod. **42**: 217–39 (1940). — Dry hills, Hudson Hope, B. C., *Groh*, no. 802 (E, G).

**Vicia americana** Muhl. var. **angustifolia** Nees. — Dry slope, Peace River, Alta., *Moss*, no. 6094 (UA, G).

**Lathyrus ochroleucus** Hook. — Dawson Creek, B. C., *Groh*, Sept. 3, 1934 (E); dry soil, Bear Flat, B. C., *Proctor*, May 30, 1935, no. 10197 (B); Beaverlodge district, Alta., *Stacey*, 1926; dry hills, Hudson Hope, B. C., *Groh*, no. 801 (E, G); aspen woods,



Brownvale, Alta., *Groh*, no. 1003 (E, G). — Reported by Groh as common and widespread. Noted in the *Catalogue* only as an unverified record by John Macoun between Lesser Slave L. and Hudson Hope.

## GERANIACEAE

**Geranium nemorale** Suksd. var. **Bicknellii** (Britton) Fern. — See Rhod. 43: 35–6 (1941). — Specimens cited in the *Catalogue* under *G. Bicknellii* should all be referred here. Groh reports the species as widespread, especially in recently burned areas.

## LINACEAE

**Linum usitatissimum** L. — Beaverlodge, *Groh*, Aug. 29, 1934 (E). — Reported by Groh as “Sparingly escaped in the Peace River parts particularly.”

## POLYGALACEAE

**Polygala Senega** L. — Dry open meadow near railroad, Blue Sky, Alta., *Mrs. Henry*, no. 666 (G, P); Peace River Block, B. C., *J. Travis*, 1930 (B).

## EUPHORBIACEAE

**Euphorbia glyptosperma** Engelm. — Railway yards, Berwyn, Alta., *Groh*, no. 1021 (E, G).

**Euphorbia serpyllifolia** Pers. — Railway gravel, Peace River, Alta., *Groh*, Sept. 12, 1934 (E).

## CALLITRICHACEAE

**Callitriche hermaphrodita** L. — See Rhod. 25: 211 (1923), and Vierteljahrssch. Nat. Ges. Zür. 53<sup>4</sup>: 548 (1909). — Dease R., B. C., *Mrs. Henry*, no. 962 (P).

## ACERACEAE

**Acer Negundo** L. — Groh states that it has been “seen a few times where introduced by planting, and tending to multiply.”

## BALSAMINACEAE

**Impatiens biflora** Walt. — Specimens collected by Graham in the Peace River Block, B. C. (nos. 448, 509, BU) are probably referable to this species, although more well-collected specimens are needed before its correct status, as well as that of *I. Nolitangere*, can be defined. Brinkman reports *I. biflora* in the Lesser Slave L. district (no. 3920), but the writer has not seen his material.

## MALVACEAE

**Malva neglecta** Wallr. — *M. rotundifolia* of Am. auth. — See Rhod. 39: 98–9 (1937). — Athabaska, Alta., *Groh*, July 3, 1935 (E). — Groh states that he has seen it only at Athabaska.

## GUTTIFERAE

**Hypericum majus** (Gray) Britton. — Lake shore, Grouard, Alta., *Groh*, no. 1068 (E, G).

## VIOLACEAE

**Viola arvensis** Murr. — Fields and gardens, Beaverlodge, Alta., *Groh*, Aug. 28, 29, 1934 (E); no. 687 (E, G). — Groh states that in a garden at Beaverlodge, “. . . a colony of plants exhibited every degree of variation between this and *V. tricolor* L., suggesting that the whole stock may have been derived from reversion of the garden pansy.”

## CACTACEAE

**Opuntia fragilis** (Nutt.) Haw. — Specimens cited in the *Catalogue* under *O. polyantha* belong here.

## ELAEAGNACEAE

**Elaeagnus commutata** Bernh. — Specimens cited in the *Catalogue* under *E. argentea* (Pursh, not Moench) should bear this name.



## ONAGRACEAE

**Epilobium densum** Raf. — Wetter parts of muskeg, near lake, Smith, Alta., *Moss*, no. 6300 (UA, G); depression with willows and tall grass near Slave Lake, Alta., *Moss*, no. 6055 (UA, G).

**Epilobium palustre** L. var. **monticola** Haussk. — Muskeg, Dixonville, N. of Grimshaw, Alta., *Moss*, no. 6152 (UA). — Previously collected only in the mountains.

**Oenothera strigosa** (Rydb.) Mack. & Bush. — Railway, Grande Prairie, Alta., *Groh*, no. 865 (E, G). — Groh records "*Oenothera* sp." as fairly common in the Athabaska district and occasionally farther west. More collections will be necessary before it will be known whether more than one species are involved.

## HALORRHAGACEAE

**Myriophyllum exalbescens** Fern. — *M. spicatum* of auth. — See *Rhod.* **21**: 120 (1919). — Slough W. of Turnagain R., B. C., alt. 2100', *Mrs. Henry*, no. 929 (G, P); Blue L., B. C., *Mrs. Henry*, no. 795 (P); near mouth of stream on sandy lake shore, Faust, Lesser Slave L., *Moss*, no. 6201 (UA). — Reported by Graham (as *M. spicatum*) in the Peace River Block, B. C.

## UMBELLIFERAE

**Cicuta occidentalis** Greene. — Rose Prairie, B. C., *Groh*, Sept. 6, 1934 (E); alkaline slough, Bear L., near Grande Prairie, Alta., *Groh*, no. 898 (E); dried slough along Halfway R., near the Peace, at Farrell, B. C., *Groh*, no. 721 (E); wet runway in prairie, Notikewin, *Moss*, no. 6190 (UA, G). — John Macoun's record of *C. maculata* between Lesser Slave L. and Hudson Hope in 1872 probably refers to this species.

**Cicuta bulbifera** L. — Wet ground by railway, W. of McLennan, Alta., *Groh*, Sept. 14, 1934 (E). — Groh mentions only this one locality.

**Carum Carui** L. — Railway, McLennan, Alta., *Groh*, no. 1038 (E). — Groh reports it as rather widespread in the agricultural districts, but not common.

**Zizia aptera** (Gray) Fern. — *Z. cordata* of auth. — See *Rhod.* **41**: 441–4 (1939). — Specimens noted in the *Catalogue* under *Z. cordata* should be referred here; also specimens collected by Groh at Brownvale, Alta. (no. 1002, E) and Rolla, B. C. (no. 834, E, G); and by J. Travis in the Peace River Block, B. C., 1930 (B).

**THASPIUM AUREUM** Nutt. — Reported by Graham in the Peace River Block, B. C.

**Lomatium foeniculaceum** (Nutt.) Coult. & Rose. — See *Ann. Mo. Bot. Gard.* **25**: 259–60 (1938). — Dry sunny bank of Peace R., Fort St. John, B. C., *Mrs. Henry*, no. 671 (G, P); hillside at Bear Flat, Peace R., B. C., *M. Proctor*, May 19, 1935, no. 10177 (B).

**Anethum graveolens** L. — Groh states that this was "found on dry slope at Peace River, Alta., apparently an escape from cultivation."

**OENANTHE SARMENTOSA** Presl. — Reported by Graham in the Peace River Block, B. C.

**Pastinaca sativa** L. — Groh states that this species is naturalized mostly in the western half of the agricultural region.

## CORNACEAE

**Cornus stolonifera** Michx. var. **Baileyi** (Coult. & Evans) Drescher. — This was erroneously indicated in the *Catalogue* as a new combination. See *Trans. Mich. Acad. Sci. Arts & Letters* **28**: 190 (1933).

## PYROLACEAE

**Pyrola secunda** L. — Sandy tract at Hudson Hope, B. C., *Groh*, no. 784 (E); dry pine woods, Peace River, Alta., *Moss*, no. 6125 (UA). — Noted in the *Catalogue* only from the mountains.

**Pyrola asarifolia** Michx. — Poplar woods, Hudson Hope, B. C., *Groh*, no. 804 (E, G); dry pine woods, Peace River, Alta., *Moss*, no. 6124 (UA, G). — This typical form of the species noted in the *Catalogue* only from the mountains.

**Monotropa uniflora** L. — Aspen-poplar woods, Faust, Lesser Slave L., *Moss*, no. 6217 (UA).



## ERICACEAE

**Ledum palustre** L. var. **decumbens** Ait. — Mountain near Laurier Pass, B. C., alt. 4400', *Mrs. Henry*, no. 511 (P).

**Arctostaphylos Uva-ursi** (L.) Spreng. — Dry stony soil, Ft. St. John, B. C., *Mrs. Henry*, no. 677 (G, P); dry hills, Hudson Hope, B. C., *Groh*, no. 805 (E, G); railway embankment, McLennan, Alta., *Groh*, no. 1039 (E). — Noted in *Catalogue* only on reports of Macoun and Raup. Common.

**Vaccinium uliginosum** L. — When the *Catalogue* was prepared this species was known in our region from a single specimen collected by Dawson on the Frances R. The following material collected by *Mrs. Henry* is therefore worthy of note: S. E. slope of mountain near Akie Pass, B. C., alt. 5000', no. 579 (P); Akie Pass, B. C., alt. 4600', no. 560 (P); clay bank, E. of Gunderhoo Pass, B. C., alt. 4700', no. 903 (G, P); Dease L., B. C., alt. 2500', no. 956 (G, P).

## PRIMULACEAE

**Primula egaliksensis** Wormsk. f. **violacea** Fern. — See *Rhod.* **30**: 59 (1928). — In moss near stream, Caribou Pass, B. C., alt. 5500', *Mrs. Henry*, no. 738 (G, P).

## GENTIANACEAE

**Halenia deflexa** (Smith) Griseb. — Noted in the *Catalogue* from a single collection on the Henry R., B. C. (*Mrs. Henry*, no. 174). Brinkman reports a specimen (no. 4004) from the Lesser Slave L. district, but it has not been seen by the writer.

## POLEMONIACEAE

**Polemonium occidentale** Greene. — Low ground, Notikewin, Alta., *Moss*, no. 2244 (UA); swampy ground at roadside, Dixonville, N. of Grimshaw, Alta., *Moss*, no. 6146 (UA, G).

**Polemonium lanatum** Pall. var. **humile** (Willd.) Brand. — A specimen collected by *Mrs. Henry* at Cypress Pass, B. C., alt. 4000', no. 700 (G, P) is probably referable to this species.

**Polemonium rotatum** Eastwood. — Mountain near Laurier Pass, B. C., alt. 5400', *Mrs. Henry*, no. 645 (P); Laurier Pass, B. C., alt. 4600', *Mrs. Henry*, no. 648 (P). — Both of these specimens are placed in this species tentatively. Dr. E. T. Wherry states (personal communication) that a habit photograph made by *Mrs. Henry* and attached to one of the above sheets shows rotate-campanulate corollas, and so does not agree entirely with the original description of *P. rotatum*.

## HYDROPHYLLACEAE

**Phacelia tanacetifolia** Benth. — Montney, B. C., *Groh*, Sept. 5, 1934 (E). — Also reported by *Groh* at Baldonnel, B. C., and both regarded as garden escapes.

## BORAGINACEAE

**Lappula echinata** Gil. — Peace River district, B. C., *Miss Bertrand*, 1933, no. 9422 (B); Peace River, Alta., *Groh*, Sept. 12, 1934 (E); railway, Spirit River, Alta., *Groh*, no. 943 (E). — Reported by *Groh* as a rather common weed along railways and in fields throughout most of the agricultural districts.

**Hackelia deflexa** (L.) Opiz. — Dry roadside, Hudson Hope, B. C., *Groh*, no. 810 (E, G); open woods, Taylor Flat, B. C., *Groh*, no. 830 (E).

## LABIATAE

**Agastache Foeniculum** (Pursh) Ktze. — Moist fields, Peace River, Alta., *Miss J. Bostock*, Aug. 1926 (E); roadside, Peace River, Alta., *Groh*, no. 1023 (E, G). — Noted in the *Catalogue* on reports by John Macoun between Lesser Slave L. and Hudson Hope in 1872, and by Dawson at Dunvegan in 1879.

**Stachys palustris** L. subsp. **pilosa** (Nutt.) Epling. — See *Fedde Rep. Spec. Nov. Beihefte* **80**: 63 (1934). — Material cited in the *Catalogue* under *S. scopulorum* should bear this name.



## SOLANACEAE

**Solanum nigrum** L. — Reported by Groh in gardens and fields at Beaverlodge, Alta., and Taylor, B. C., Sept. 1934.

**Solanum triflorum** Nutt. — Field, at Taylor, B. C., *Groh*, no. 824 (E). — Also reported by Groh at Taylor in 1934, "in fields with crops."

## SCROPHULARIACEAE

**Linaria vulgaris** Hill. — Clyde, Alta., *Groh*, July 4, 1935 (E); railway yards, Berwyn, Alta., *Groh*, no. 1020 (E).

**Linaria minor** (L.) Desf. — Railway, Rochefort Bridge, Alta., *Groh*, no. 1082 (E, G).

**Linaria reticulata** Desf. — Escaped from gardens at Fort St. John, B. C., *Groh*, Sept. 7, 1934 (E), and at Beaverlodge, Alta., *Groh*, Aug. 29, 1934 (E). — This is the *L. macroccana* of Groh's list.

**Penstemon procerus** Dougl. — Edge of field, Beaverlodge, Alta., *Groh*, no. 851 (G); Peace River Block, B. C., *Graham*, no. 136 (BU) (*P. confertus* var. *caeruleo-purpureus* of Graham's list). — Noted in the *Catalogue* only from specimens collected on the upper Halfway R.

**Penstemon Gormanii** Greene. — Turnagain R., B. C., *Mrs. Henry*, no. 938 (G, P); Sand Cr., B. C., *Mrs. Henry*, nos. 953, 971, 972 (G, P).

**Limosella aquatica** L. — Stream bank, Grande Prairie, Alta., *Groh*, no. 916 (E).

**Veronica alpina** L. var. **unalaschcensis** Cham. & Schl. — Specimens collected by E. C. Abbe and the writer on Mt. Selwyn, and probably the others cited in the *Catalogue* under *V. Wormskjoldii* should bear this name. — See Fernald in *Rhod.* **41**: 447–57 (1939) for a recent revision of the group.

**VERONICA ANAGALLIS-AQUATICA** L. — Reported by Graham in the Peace River Block, B. C.

**Veronica persica** Poir. — *V. Tournefortii* of auth. — See *Acad. Nat. Sci. Phila. Monog.* **1**: 349 (1935). — Garden at Beaverlodge, Alta., *Groh*, Aug. 29, 1934 (E).

**Castilleja fulva** Pennell. — See *Proc. Acad. Nat. Sci. Phila.* **86**: 540 (1934). — The following specimens, cited in the *Catalogue*, should be referred to this species: *Mrs. Henry*, nos. 230, 231; *Raup & Abbe*, nos. 3602, 3944. No. 3602 is the type of the species. Further specimens, not cited in the *Catalogue*, are: Christine Falls, Graham R., B. C., alt. 3000', *Mrs. Henry*, no. 465 (P); Graham R., B. C., alt. 4000', *Mrs. Henry*, nos. 496, 502 (P).

**Castilleja Henryi** Pennell. — See *Proc. Acad. Nat. Sci. Phila.* **86**: 534–5 (1934). — Mountain at head of Besa R., B. C., alt. 5500', *Mrs. Henry*, no. 303 (P, G) (cited in *Catalogue*); mountain E. of Laurier Pass, B. C., alt. 5500', *Mrs. Henry*, no. 709 (G, P). No. 303 is the type of this species.

**Castilleja Raupii** Pennell subsp. **typica** Pennell. — See *Proc. Acad. Nat. Sci. Phil.* **86**: 528–30 (1934). — White Mud R., Alta., *J. M. Macoun*, no. 61256 (G, N, O); Toad R., B. C., alt. 4200', *Mrs. Henry*, no. 120 (P); N. of Grimshaw, Alta., *Moss*, no. 2242a (P); Notikewin, Alta., *Moss*, no. 2242b (P); muskeg, Dixonville, N. of Grimshaw, Alta., *Moss*, no. 6144 (UA, G).

**Euphrasia subarctica** Raup. — Musqua R., B. C., *Mrs. Henry*, no. 790 (G, P).

**Rhinanthus Kyrollae** Chab. — Wet meadow, Beaverlodge, Alta., *Groh*, Aug. 30, 1934 (E); Bear Flat, B. C., *Freer*, July 31, 1935, no. 10133 (B); open woods, Notikewin, *Moss*, no. 2257 (UA); dry ground, roadside, Dixonville, N. of Grimshaw, Alta., *Moss*, no. 6148 (UA, G); Peace River Block, B. C., *Graham*, no. 572 (BU) (*R. Crista-galli* of Graham's list). — Noted by Groh as rather common in the western parts of the agricultural district. John Macoun's record of *R. minor* between Lesser Slave L. and Hudson Hope in 1872 may belong here.

**Pedicularis labradorica** Wirsing, not Houttuyn. — See *Rhod.* **40**: 292 (1938). — Note change of authority.

**Pedicularis Langsdorfii** Fisch. — Mountain in Caribou Pass, B. C., alt. 6500', *Mrs. Henry*, no. 615 (P).



## PLANTAGINACEAE

**Plantago major** L. — Dry roadsides, Hudson Hope, B. C., *Groh*, nos. 729 (E), 733 (E, G); railway yards, Beaverlodge, Alta., *Groh*, no. 663 (E, G). — Many or all of Groh's records for *P. major* var. *asiatica* are probably referable to the typical species. He reports the variety as abundant and widespread as a weed throughout the agricultural districts.

**Plantago lanceolata** L. — Barnyard at Rose Prairie, B. C., *Groh*, Sept. 6, 1934 (E). — Also reported by Groh at North Pine.

## RUBIACEAE

**Galium aparine** L. — Athabaska, Alta., *Groh*, July 3, 1935 (E).

## CAPRIFOLIACEAE

**Viburnum edule** (Michx.) Raf. — Material cited in the *Catalogue* as *V. pauciflorum* Raf. should bear this name. See Fernald in *Rhod.* **43**: 481-3 (1941).

**Symphoricarpos albus** (L.) Blake. — In a recent monograph (*Jour. Arn. Arb.* **21**: 201-52, 1940) Jones has not maintained the var. *pauciflorus* under which the Peace River plants were cited in the *Catalogue*. It is noteworthy that the writer has recently seen a specimen collected at Bear Flat, B. C., by Percy Freer (June 18, 1935, no. 10140 (B)) which closely matches the typical species as represented in the Gray Herbarium.

**Lonicera involucrata** Banks. — Noted in the *Catalogue* only from the mountains, but reported by Brinkman (no. 3912) in the Lesser Slave L. district. The writer has not seen this material, but he has collected the species at Lac la Biche to the eastward.

**Lonicera notha** Zab. (*L. Ruprechtiana* × *L. tartarica*). — Garden escape in dry ground, Hudson Hope, B. C., *Groh*, no. 813 (A, E).

## CUCURBITACEAE

**Echinocystis lobata** T. & G. — Reported by Groh at Peace River, High Prairie, and in the Athabaska district, Alta.

## CAMPANULACEAE

**Campanula aurita** Greene. — Specimens cited in the *Catalogue* under *C. rotundifolia* var. *alaskana* should be referred to this species. Another specimen was collected by Mrs. Henry in 1935: stony slide on a mountainside near St. Paul's Mt., B. C., alt. 6500', no. 897 (part) (P).

## COMPOSITAE

**Grindelia perennis** A. Nels. — See *Ann. Mo. Bot. Gard.* **21**: 485 (1934). — Material cited in the *Catalogue* under *G. squarrosa* belongs here, as well as specimens collected by Groh at Beaverlodge, Alta., no. 665 (E, G). Noted by Groh as rather widespread throughout the agricultural districts.

**Solidago decumbens** Greene var. **oreophila** (Rydb.) Fern. — See *Rhod.* **38**: 202-4 (1936). — Following Prof. M. L. Fernald's recent revision of this group, at least a part of the material cited in the *Catalogue* under *S. decumbens* (*Raup & Abbe*, nos. 3858, 4251) should be placed here. Likewise, the specimens cited under *S. oreophila* (*Brinkman*, no. 4511; *Mrs. Henry*, no. 84).

**Aster angustus** (Lindl.) T. & G. — Peace River, Alta., *Groh*, Sept. 12, 1934 (E); railway, Hines Creek, Alta., *Groh*, no. 998 (E); railway, McClennan, Alta., *Groh*, no. 992 (E, G).

**Aster sibiricus** L. — Material cited in the *Catalogue* under *A. Richardsonii* should bear this name. See Porsild, *Rhod.* **41**: 291; Scamman, *Rhod.* **42**: 339; Hultén, *Fl. Kamtch.* **4**: 157-8, and *Fl. Aleut. Isl.* 317-18.

**Erigeron angulosus** Gaudin var. **kamtschaticus** (DC.) Hara. — *E. elongatus* Ledeb. — See *Rhod.* **40**: 346 (1938) and **41**: 388-390 (1939). — Material cited in the *Catalogue* under *E. acris* var. *asteriodes* should bear the above name.

**Erigeron elatus** Greene. — See *Rhod.* **40**: 344-47 (1938). — Specimens cited in the *Catalogue* under *E. acris* var. *arcuans* belong here.



**Erigeron jucundus** Greene. — Material cited in the *Catalogue* under *E. acris* L. var. *debilis* should bear this name.

**Erigeron caespitosus** Nutt. — Two of Mrs. Henry's numbers (143, 181), cited in the *Catalogue* under *E. glabellus*, should be referred to this species.

**Erigeron canadensis** L. — Noted by Groh as common and widespread in the agricultural districts, "on cultivated and pasture fields on the lighter type of soil."

**Antennaria atriceps** Fern. — Previously known only from the type locality on Mt. Selwyn (*Raup & Abbe*, no. 4134). Excellent additional material was collected by Mrs. Henry on a mountain E. of Laurier Pass, B. C., alt. 5800', no. 715 (G, P).

**Antennaria aprica** Greene. — Material cited in the *Catalogue* under *A. parvifolia* Nutt. should be referred to this species. Additional specimens were collected by Mrs. Henry in 1935, extending the known range westward into the foothills: Cache Cr., B. C., no. 680 (G, P); S. fork of Halfway R., B. C., alt. 4200', no. 727 (G, P).

**Iva axillaris** Pursh. — Alkaline soil, Bear L., near Grande Prairie, Alta., *Groh*, no. 892 (E, G); dry field, Lower Beaverlodge, Alta., *Groh*, no. 841 (E, G); roadside north of Kleskun Lake bottom, near Grande Prairie, Alta., *Groh*, no. 901 (E, G).

**Iva xanthifolia** Nutt. — Dry land, Beaverlodge, Alta., *Groh*, no. 683 (E); railway, McLennan, Alta., *Groh*, no. 990 (E, G); railway, Wanham, Alta., *Groh*, no. 985 (E, G).

**Ambrosia artemisiifolia** L. — McLennan, Alta., *Groh*, Sept. 14, 1934 (E).

**Ambrosia trifida** L. — Railway yards, Spirit River, Alta., *Groh*, no. 925 (E, G). — Occasional in the agricultural districts, according to Groh, as far west as Pouce Coupé, B. C.

**Helianthus annuus** L. — Hythe, Alta., *Groh*, Aug. 31, 1934 (E); Pouce Coupé, B. C., *Groh*, Sept. 1, 1934 (E).

**Helianthus giganteus** L. — Railway yards, Spirit River, Alta., *Groh*, nos. 927 (E), 928 (E, G); roadside, High Prairie, Alta., *Moss*, no. 2404 (UA).

**Madia glomerata** Hook. — Ditch along railway, McLennan, Alta., *Groh*, no. 1052 (E, G).

**Gaillardia aristata** Pursh. — Athabaska, Alta., *Groh*, July 3, 1935 (E); railway yards, Berwyn, Alta., *Groh*, no. 1017 (E).

**Anthemis Cotula** DC. — Yard at Hudson Hope, B. C., *Groh*, no. 814 (E, G); railway yards, Spirit River, Alta., *Groh*, no. 926 (G).

**Anthemis tinctoria** L. — Garden escape, McLennan, Alta., *Groh*, Sept. 13, 1934 (E).

**Achillea Ptarmica** L. — Roadside ditch, escape from planting, High Prairie, Alta., *Groh*, no. 1060 (E, G).

**Matricaria matricarioides** (Less.) Porter. — Included in the *Catalogue* on the basis of an early record (1875) by John Macoun at Hudson Hope. Groh lists it as abundant and widespread throughout the agricultural districts, and Graham also notes it in the Peace River Block.

**Matricaria maritima** L. var. *agrestis* (Knaf.) Wilmott. — *M. inodora* of auth. — Groh states that this species has been "Seven times noticed from McLennan westward to the Peace River Block."

**Chrysanthemum Leucanthemum** L. var. *pinnatifidum* Lecoq & Lamotte. — Hythe, Alta., *Groh*, Aug. 31, 1934 (E); railway at Greencourt, Alta., *Groh*, no. 1084 (E). — Brinkman's record of *C. Leucanthemum* (no. 4649) in the Lesser Slave L. district probably belongs here.

**Artemisia dracunculoides** Pursh. — Peace River, Alta., *Groh*, Sept. 12, 1934 (E), and nos. 1033, 1034 (E); dry slope of river valley, Peace River, Alta., *Moss*, no. 6087 (UA, G); Rose Prairie, B. C., *Groh*, Sept. 6, 1934 (E); railway yards, Beaverlodge, Alta., *Groh*, no. 664 (E, G). — Noted by John Macoun between Lesser Slave L. and Hudson Hope in 1872.

**Artemisia caudata** Michx. — Roadsides and railways, Spirit River, Alta., *Groh*, nos. 939, 961 (E, G).

**Artemisia borealis** Pall. — See *Rhod.* 29: 93-5 (1927). — Moist sandy river bar,



Musqua R., B. C., *Mrs. Henry*, no. 785 (G, P). — This species was represented in the *Catalogue* only by its variety *Purshii* Bess.

**Artemisia Absinthium** L. — Roadside, Grande Prairie, Alta., *Groh*, no. 911 (E, G). — Apparently occasional in the agricultural districts. Reported by Brinkman (no. 3875) in the Lesser Slave L. district.

**Artemisia biennis** Willd. — Swale E. of Beaverlodge, Alta., *Groh*, Aug. 30, 1934 (E); Peace River, Alta., *Miss Bostock*, Aug. 1926 (E). — Noted by Groh as abundant and widespread throughout the agricultural districts. Reported by John Macoun between Lesser Slave L. and Hudson Hope in 1872.

**Artemisia arctica** Less. — Material cited in the *Catalogue* as *A. norvegica* should be referred to this species. See Hultén, *Fl. Kamtchatka* 4: 176–80 (1930) for a discussion of *A. arctica* and its relationships.

**Artemisia ludoviciana** Nutt. — Peace River, Alta., *Groh*, Sept. 12, 1934 (E); dry bank, Grande Prairie, Alta., *Groh*, no. 872 (E, G). — Reported by John Macoun between Lesser Slave L. and Hudson Hope in 1872. Groh notes it as common throughout most of the agricultural districts.

**Artemisia Abrotanum** L. — Dry bank, Grande Prairie, Alta., *Groh*, no. 873 (E).

**Arnica obtusifolia** Less. var. **acuta** Raup. — Previously known only from the type collection in a pass N.E. of Robb L., B. C. (*Mrs. Henry*, no. 279). Additional material was collected by *Mrs. Henry* in 1935, on a mountain near Besa R., B. C., no. 751-a (G, P); and in 1933 on a mountain near the Akie R., B. C., alt. 5000', no. 580 (P).

**Senecio vulgaris** L. — Garden at Grande Prairie, Alta., *Groh*, no. 888 (E, G). — Noted by Groh as "occasional from the Grande Prairie district eastward."

**Senecio palustris** (L.) Hook. — Lake shore, McLennan, Alta., *Groh*, no. 1045 (E, G).

**SENECIO PURSHIANUS** Nutt. — Reported by Brinkman in the Lesser Slave L. district (no. 4085).

**Cirsium Drummondii** T. & G. — Beaverlodge, Alta., *Groh*, Aug. 29, 1934 (E); dry poplar woods, Hudson Hope, B. C., *Groh*, no. 737 (E, G); prairie, Notikewin, Alta., *Moss*, no. 6165 (UA, G). — Noted in the *Catalogue* only from the mountains. It is reported by Groh as occurring chiefly in the western part of the agricultural district.

**Cirsium arvense** (L.) Scop. — By railway elevator, Huallan, Alta., *Groh*, no. 863 (E); yard, Spirit River, Alta., *Groh*, no. 924 (E). — Groh states that this species is now widely distributed in the agricultural districts, though but recently introduced.

**Crepis tectorum** L. — Clyde, Alta., *Groh*, July 4, 1935 (E); railway, Spirit River, Alta., *Groh*, no. 967 (E); railway, Beaverlodge, Alta., *Groh*, no. 882 (E); roadside, Hudson Hope, B. C., *Groh*, no. 815 (E, G).

**CREPIS VIRENS** L. — Reported by Graham in the Peace River Block, B. C.

**Taraxacum officinale** Weber. — White soil of parkland, South Wapiti, Alta., *Groh*, no. 689 (E). — Reported by Groh as common and widespread in the agricultural districts. Mr. Groh also states that a "fair proportion" of the common dandelions of the region belong to *T. laevigatum*; but in the absence of specimens, especially since *T. laevigatum* as recently interpreted by Prof. Fernald is a somewhat more southern species (*Rhod.* 35: 379–80), these records had best be left tentative.

**Lactuca biennis** (Moench) Fern. — *L. spicata* of auth. — See *Rhod.* 42: 300–302 (1940). — Lesser Slave L. district, *Brinkman*, nos. 4036, 4479 (Br).

**Lactuca scariola** L. f. **integrifolia** (Bogenh.) G. Beck. — Peace River, Alta., *Groh*, Sept. 13, 1934 (E); denuded bench of river valley, Peace River, Alta., *Moss*, no. 6137 (UA, G); roadside, Spirit River, Alta., *Groh*, no. 940 (E, G). — Plants cited by Groh under *L. scariola* belong to this form.

**Prenanthes racemosa** Michx. — Pouce Coupé, B. C., *Sgt. Greenwood*, Aug. 1932, no. 9223 (B); prairie at North Star, near Notikewin, Alta., *Moss*, no. 2274 (UA); prairie, Notikewin, *Moss*, no. 6163 (UA, G); burned poplar area, Hythe, Alta., *Moss*, no. 2326 (UA).

**Sonchus arvensis** L. — Fahler, Alta., *Groh*, Sept. 14, 1934 (E); roadside, Grouard, Alta., *Groh*, no. 1063 (E). — Apparently occasional in our region, and principally represented, according to Groh, by the following variety.



**Sonchus arvensis** L. var. **glabrescens** Guenth., Wimm. & Grab. — See Rhod. **12**: 145 (1910); **30**: 19 (1928). — Railway yards, Spirit River, Alta., *Groh*, no. 930 (E); railway, Grande Prairie, Alta., *Groh*, no. 866 (E). — Groh states that this variety is rather common and widespread in the agricultural districts.

**Sonchus asper** (L.) Hill. — Baldonnel, B. C., *Groh*, Sept. 5, 1934 (E). — Noted by Groh "in the Athabaska, Peace River and Fort St. John regions."

**Sonchus oleraceus** L. — Garden, at Beaverlodge, Alta., *Groh*, no. 837 (E). — Reported by Groh from this single locality.

**Tragopogon major** Jacq. — Beaverlodge, Alta., *Groh*, Aug. 29, 1934 (E); railway, Wembley, Alta., *Groh*, no. 885 (E). — At least a part of the plants cited by Groh from Beaverlodge under *T. pratensis* belong to this species.

**Tragopogon pratensis** L. — Railway yards, Dawson Creek, B. C., *Groh*, no. 832 (E, G). — Previously reported by *Brinkman* (no. 4084) in the Lesser Slave L. district.

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